

Environmental Protection Agency

Wednesday
May 25, 1983

Part III

**Environmental
Protection Agency**

**Notification Requirements; Reportable
Quantity Adjustments; Proposed Rule and
Designation of Additional Hazardous
Substances; Advanced Notice of
Proposed Rulemaking**

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 302

[SW H-FRL 2207-5]

Notification Requirements; Reportable Quantity Adjustments

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: Sections 103(a) and 103(b) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("Superfund," "CERCLA," or "the Act") require that persons in charge of vessels or facilities from which hazardous substances have been released in quantities that are equal to or greater than the reportable quantities ("RQs") immediately notify the National Response Center of the release. Section 102 sets a reportable quantity of one pound for hazardous substances, except those for which reportable quantities have been established pursuant to Section 311(b)(4) of the Federal Water Pollution Control Act.

Section 102(b) authorizes the Environmental Protection Agency ("EPA" or "the Agency") to adjust reportable quantities. EPA is proposing in this notice to adjust many of the reportable quantities established under CERCLA. These RQ adjustments are intended to reduce the burdens of reporting on the regulated community, to allow EPA to focus its resources on the most serious releases, and to protect public health and welfare and the environment more effectively. To help implement these changes, the Agency is clarifying notification requirements for releases of hazardous substances under CERCLA.

The Agency is also proposing to revise reportable quantities established under Section 311(b)(4) of the Clean Water Act ("CWA") for discharges of hazardous substances into navigable waters, so that the CWA Section 311 reportable quantities will be identical to and therefore consistent with those ultimately promulgated under CERCLA.

DATES: Comments must be received on or before July 25, 1983.

ADDRESSES: *Comments:* Comments should be submitted in triplicate to: Emergency Response Division, Docket Clerk, Attention: Docket Number 102RQ, U.S. Environmental Protection Agency, 401 M Street, S.W., WH-548B, Washington, D.C. 20460.

Docket: Copies of materials relevant to this rulemaking are contained in Room S-398 at U.S. Environmental

Protection Agency, 401 M Street, S.W., Washington, D.C. 20460. The docket is available for review between the hours of 8:00 a.m. and 4:00 p.m. Monday through Friday. As provided in 40 CFR Part 2, a reasonable fee may be charged for copying services.

FOR FURTHER INFORMATION CONTACT:

Dr. K. Jack Kooyoomjian, Chief, Regulation Development Section, Emergency Response Division (WH-548 B), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460, or the RCRA/Superfund Hotline (800) 424-9346, in Washington, D.C., (202) 382-3000.

SUPPLEMENTARY INFORMATION: The contents of today's preamble are listed in the following outline:

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Introduction

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (Pub. L. 96-510), 42 U.S.C. § 9601 *et seq.*, enacted on December 11, 1980, establishes broad federal authority to deal with releases or threats of releases of hazardous substances from vessels and facilities. The Act specifies an initial list of 696 hazardous substances (Section 101(14)). EPA may designate additional hazardous substances (Section 102).

The Act requires the person in charge of a vessel or facility to notify the National Response Center ("NRC") immediately when there is a release of a designated hazardous substance in an amount equal to or greater than the reportable quantity for that substance (Sections 103 (a) and (b) ¹). Section 102(b) of CERCLA establishes RQs for releases of designated hazardous substances at one pound, unless other reportable quantities were assigned under Section 311 of the Clean Water Act. Section 102 authorizes EPA to adjust all of these reportable quantities.

A major purpose of the Sections 103 (a) and (b) notification requirements is to alert government officials to releases of hazardous substances that may require rapid response to protect public health and welfare and the environment. Under the Act, the federal government may respond whenever there is a

¹ Section 103(c) provides a separate and distinct notification requirement. Section 103(c) requires notification of the existence and location of facilities at which hazardous wastes have been stored, treated, or disposed of and which are not presently permitted or accorded interim status under Section 3005 of the Resource Conservation and Recovery Act of 1976, as amended ("RCRA"). EPA has published an interim interpretative notice and policy statement concerning this notification, as well as a form that persons may use to notify EPA of such sites. Persons who have complied with Section 103(c) of CERCLA are still subject to notification provisions of Sections 103 (a) and (b), unless the release qualifies for the exemption provided by Section 103(f) (see 46 FR 22144 (April 15, 1981)).

release or a substantial threat of a release into the environment of a hazardous substance or of other pollutants or contaminants which may present an imminent and substantial danger to public health or welfare (Section 104). Response activities are to be taken, to the extent possible, in accordance with the National Contingency Plan developed under Section 105, which has been revised to reflect the responsibilities and powers created by CERCLA (47 FR 31180 (July 16, 1982)). Notification based on reportable quantities is merely a trigger for informing the government of a release so that the need for response can be evaluated and any necessary response undertaken in a timely fashion. The government will not necessarily respond to all reported releases.

Section 103(b) establishes penalties, including criminal sanctions, for persons in charge of vessels or facilities who fail to report releases of hazardous substances which equal or exceed reportable quantities. Any person who, as soon as he has knowledge of a reportable release, fails to report the release pursuant to Section 103 (a) or (b) shall, upon conviction, be fined no more than \$10,000 or imprisoned for not more than one year, or both. Notifications received under Section 103(a) or information obtained by such notice cannot be used against any reporting person in any criminal case, except a prosecution for perjury or for giving a false statement.

The notification requirements for releases of hazardous substances are addressed in this rulemaking. The rule proposed today lists the CERCLA hazardous substances, proposes adjustments to the reportable quantities for 387 of the 696 hazardous substances, and discusses procedures for reporting releases. An Advance Notice of Proposed Rulemaking (ANPRM) covering the designation of hazardous substances in addition to those specified in Section 101(14) of the Act is also being published in today's *Federal Register*.

It should be noted that other provisions of the Act may be applicable even where notification is not required. Therefore, nothing in this proposal should be interpreted as reflecting Agency policy or the applicable law with respect to other provisions of the Act. For example, a party responsible for a release is liable for the costs of cleaning up that release and for any natural resource damages, even if the release is not subject to the notification requirements of Sections 103 (a) and (b). Similarly, proper reporting of a release

in accordance with Sections 103 (a) and (b) does not preclude liability for cleanup costs. The fact that a release of a hazardous substance is properly reported or that it is not subject to the notification requirements of Sections 103 (a) and (b) will not prevent EPA or other governmental agencies from taking response actions under Section 104, seeking reimbursement from responsible parties under Section 107, or taking an enforcement action against responsible parties.

The section of this preamble entitled "Notification" addresses the CERCLA notification provisions, including the persons required to notify the NRC of a release, the substances for which notification is required, the types of releases subject to the notification requirements, and the exemptions from these requirements. The section entitled "Reportable Quantity Adjustments" discusses the proposed RQ adjustments and the methodology used in making these adjustments.

Notification

I. Mechanics of Notification

Notifications pursuant to Sections 103 (a) and (b) of CERCLA are to be made by telephone to the National Response Center. The toll-free number for notification is (800) 424-8802, except from the Washington, D.C. metropolitan area, Hawaii, and Alaska, where the telephone number for notification is (202) 426-2675. When a call is received by the National Response Center, the duty officer will ask for information including the name, address, and telephone number of the reporting individual; the identity, location, and nature of the release (e.g., the source, cause, quantity, and duration of the release); the identity of the transporter or owner of the facility or vessel; the nature of injuries or property damage; any other relevant circumstances such as weather conditions; and any corrective actions taken. The National Response Center relays release information directly to either an On-Scene Coordinator at the appropriate EPA regional office or an On-Scene Coordinator at the U.S. Coast Guard district office. The On-Scene Coordinator evaluates the situation, gives the information to appropriate state and local officials, and decides whether and how the federal government should respond to the release.

II. Persons Covered by This Notice

The Act defines broadly the key terms of the notification requirements. The word "person" includes not only

individuals, but private, public, and governmental entities as well (see Section 101(21)). "Vessel" includes essentially anything "used, or capable of being used, as a means of transportation on water" (see Section 101(28)). "Facility" is also defined broadly:

"facility" means (A) any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or publicly owned treatment works), well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, or aircraft, or (B) any site or area where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise come to be located; but does not include any consumer product in consumer use or any vessel (see Section 101(9); see also Sections 101(17) ("offshore facility") and 101(18) ("onshore facility")).

The definition of "facility" excludes consumer products in consumer use. Releases from consumer products by consumers, therefore, are not releases from a facility into the environment and, consequently, do not have to be reported. Although the Act does not define the term "consumer product," the Consumer Product Safety Act defines that term as, generally, any article sold to a consumer for the person's use, consumption or enjoyment in or around a household, residence, school, in recreation, or otherwise (15 U.S.C. 2052). This definition will apply for notification under CERCLA.

For notification purposes, EPA will consider the entire contiguous plant or installation and contiguous grounds under common ownership to be the reporting facility rather than each vent, pipe, or piece of equipment at such a plant. This will avoid unnecessary and burdensome multiple calls where such a plant is experiencing more than one reportable release. A single notification will suffice for multiple concurrent releases within a facility.

The "person in charge" of a particular vessel or facility will vary according to the nature of the incident. Examples of the "person in charge" of a facility, as the Act defines that term, include a truck driver, the shift supervisor of a treatment works, or a pipeline operator. The Agency does not intend to identify specific individuals within a business entity who are responsible for reporting releases. Persons in charge of private, public, and governmental entities are more familiar with their operations and, therefore, are better able to assign reporting responsibilities. When there has been a failure to notify, the government will decide on a case-by-case basis whether to seek appropriate

remedies from either the entity or particular employees.

III. Releases Covered by This Notice

A. Hazardous Substances Subject to This Notice

Congress incorporated six lists of hazardous substances developed under environmental statutes in the Act's definition of hazardous substances (Section 101(14)). These lists are:

(1) Substances designated pursuant to Section 311 of the Clean Water Act ("CWA");

(2) Hazardous wastes² under Section 3001 of the Solid Waste Disposal Act (commonly known as the Resource Conservation and Recovery Act, "RCRA"), but excluding wastes the regulation of which has been suspended by Congress;³

(3) Toxic pollutants listed under CWA Section 307(a);

(4) Hazardous air pollutants listed under Section 112 of the Clean Air Act;

(5) Imminently hazardous chemicals or mixtures for which EPA has taken action under Section 7 of the Toxic Substances Control Act; and

(6) Substances designated pursuant to Section 102 of CERCLA.

Table 302.4 lists the hazardous substances, their regulatory synonyms, and the isomers of these substances that are subject to the notification requirements of Sections 103(a) and 103(b). The substances listed are those designated pursuant to other environmental acts only; no substances have been designated pursuant to Section 102 of CERCLA. The designation of substances pursuant to Section 102 is discussed in the ANPRM on designation and published in today's **Federal Register**.

Table 302.4 will not be static. If substances are added to or deleted from the lists of substances developed under the statutes which are incorporated in CERCLA Section 101(14), the CERCLA list of hazardous substances will change. **Federal Register** Notices reflecting changes to the lists referenced in Section 101(14) of CERCLA and to Table 302.4 will be published simultaneously.

Pursuant to Section 101(14)(C) of CERCLA, hazardous substances include

any hazardous waste having the characteristics identified or listed pursuant to Section 3001 of RCRA (but not including any waste the regulation of which has been suspended by Act of Congress). These characteristics are: ignitability, corrosivity, reactivity, or extraction procedure toxicity (ICRE) (see 40 CFR 261.20 *et seq.*). A person generating a solid waste must determine, in accordance with 40 CFR 262.11(c) of the RCRA regulations, if a waste meets these characteristics. If a waste is hazardous under the RCRA regulations, it is a hazardous substance under CERCLA. These hazardous substances, hereinafter referred to as ICRE wastes, are not (and by their nature cannot be) specifically listed. Persons who release such unlisted hazardous wastes in quantities equal to or exceeding the reportable quantities delineated in Table 302.4 for those wastes will be required, unless specifically exempted, to notify the NRC.⁴

The Act excludes certain energy-related substances from the definition of hazardous substances, and these substances are thereby exempted from the notification requirements of Section 103. These substances are petroleum, including crude oil and any fraction thereof (unless otherwise listed in Table 302.4), natural gas, natural gas liquids, liquified natural gas, synthetic gas usable for fuel, or mixtures of natural gas and such usable synthetic gas (see Section 101(14)). The notification requirements as set forth in 33 CFR Part 153 and 40 CFR Part 110 for certain discharges of oil remain in effect.

Chemical substances are often known by several different names. The names are derived from different origins, which include systematically applied nomenclatures, such as the Chemical Abstracts Collective Index System (e.g., propanenitrile, 2-hydroxy-2-methyl-); trivial names (e.g., aldrin, DDT); common chemical names (e.g., lead acetate, nitrotoluene); and trade names (e.g., Diazinon, Kepone). The substances listed in Table 302.4 are indicated by the name(s) used to identify that substance under the environmental statutes and implementing regulations incorporated in the definition of hazardous substance (Section 101(14)). Because no single

nomenclature is used consistently throughout these statutes and implementing regulations, the CERCLA substances are not listed pursuant to one nomenclature. Consequently, duplicate entries appear for hazardous substances which are listed by different names under the statutes (and their implementing regulations) incorporated into Section 101(14). For example, lindane, designated under CWA Section 311, and hexachlorocyclohexane, gamma-BHC, designated under CWA Section 307(a), are different names for the same compound and both names appear in Table 302.4

It is possible, because of the numerous names for some materials, that a substance listed is not identified by a name with which all persons who handle that substance are familiar. Such a material is considered to be a hazardous substance regardless of how it is named or identified. To facilitate identification of substances in Table 302.4, the Chemical Abstracts Service (CAS) Registry Numbers are also used in listing the CERCLA hazardous substances.

EPA is considering several alternatives for developing a nomenclature system for the promulgated list of CERCLA hazardous substances. The first alternative would be to adopt the method used in Table 302.4, i.e., to use those names which appear in the environmental statutes (and their implementing regulations) incorporated in the CERCLA definition of hazardous substances. Another option would be to use only one system of nomenclature, such as the Chemical Abstracts Collective Index System name (either the 8th or 9th Collective Index). A third option would be to list all the major synonyms for each substance, including the name under the Chemical Abstracts Collective Index System. EPA requests comments on these options.

Table 302.4 contains many broad, generic classes of organic and metallic compounds designated as toxic pollutants under CWA Section 307(a), such as "chlorinated phenols," "phthalate esters," and "zinc and compounds." Many of the broad, generic classes of compounds encompass hundreds of specific compounds. Consequently, it would be virtually impossible for the Agency to develop a reportable quantity for a generic class of compounds which would take into account the characteristics of all of the specific compounds, each with different characteristics. Therefore, in publishing Table 302.4, EPA has included the specific compounds developed in implementing Section 307(a) or Section

² Substances listed under Appendix VIII to 40 CFR Part 261 that are not designated under any one of the statutes referenced in CERCLA Section 101(14) are not CERCLA hazardous substances because Appendix VIII substances are not hazardous wastes under RCRA. The Appendix VIII substances will be considered for designation pursuant to Section 102 at a later date.

³ Even if a state properly delists, deletes, or exempts a RCRA hazardous waste pursuant to authority granted it by EPA, that waste will remain a hazardous substance for purposes of CERCLA.

⁴ The ICRE characteristics apply only to hazardous substances which are RCRA wastes prior to their release. The release of a substance which exhibits one of the RCRA characteristics but is not a waste is not a reportable event, unless that substance is listed in 40 CFR Part 302 as a hazardous substance. Since the purpose of notification is to trigger consideration of a response, however, the reporting of a release of any material that may require action by the federal government is strongly encouraged.

311 of the Clean Water Act, but no adjusted RQ is proposed for these broad, generic classes. The notification requirements apply to those specific compounds for which RQs are listed in Table 302.4, rather than to the generic listings. This does not, however, preclude liability with respect to releases of specific compounds which are within one of these generic listings but which are not listed in Table 302.4 for reporting purposes.

The Agency is not requiring notification of releases of massive forms of the solid metals originally listed under CWA Section 307(a) when the diameter of the pieces of metal released equals or exceeds 100 micrometers (0.004 inches). Releases of these metals are excluded from CERCLA reporting requirements because they are large enough to be neither respirable nor to react rapidly with air or water. The substances to which this rule applies are indicated by a "†" in Table 302.4. They are antimony, arsenic, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, and zinc. EPA requests comments on the notification requirements for metals, particularly on the appropriate cutoff size for massive forms of these solid metals.

B. Definition of Releases Subject to this Notice

Congress defined the term "release" to include within its scope virtually all ways that substances may enter the environment:

"release" means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment * * * (Section 101(22)).

Four types of releases are specifically excluded from the definition of release in CERCLA Section 101(22). They are:

(1) Releases which result in exposures to persons solely within a workplace for which claims against the employer or other persons are available;

(2) Emissions from engine exhaust from a motor vehicle, rolling stock, aircraft, vessel, or pipeline pumping station;

(3) Releases of source, byproduct, or special nuclear material from a nuclear incident subject to requirements of the Nuclear Regulatory Commission for financial responsibility under Section 170 of the Atomic Energy Act ⁵; and

⁵ A release of source, byproduct, or special nuclear material from a processing site designated under Sections 102(a)(1) or 302(a) of the Uranium Mill Tailings Radiation Control Act of 1978 is not a "release" for purposes of response actions under CERCLA but is subject to the notification

(4) The normal application of fertilizers.

A key element of the definition of "release" is the phrase "into the environment." Although the word "environment" is broadly defined in Section 101(8), some releases of hazardous substances may not enter the environment. For example, the spill of a hazardous substance onto the concrete floor of a manufacturing facility may not, for notification purposes, be "into the environment" if wholly contained in the facility. If part of the substance does enter the environment, e.g., seeps into the ground or volatilizes into the atmosphere, there would be a release into the environment and, if released in a quantity equal to or greater than the reportable quantity for that substance, the release would be subject to notification requirements of Sections 103 (a) and (b).

The legislative history of the Act indicates that the "workplace exposure" exclusion was apparently intended to limit the potential scope of third-party actions for personal injuries under the Act (see Sen. Rep. 96-848, 96th Cong., 2d Sess. 94 (1980)). The third-party action provision was subsequently deleted; however, the "workplace exposure" provision remained. Whether the release results in exposures to persons solely within a workplace does not appear to be relevant in determining whether notification is appropriate. For notification, the Agency believes that the distinction between "facility" (or "vessel") and "environment" is the determining factor; releases from a facility (or vessel) that enter the environment are reportable events. The Agency requests comments on this interpretation.

C. Determination of When a Reportable Quantity Has Been Released

Pursuant to Section 103(a) of the Act, notification must be given as soon as the person in charge of a vessel or facility has knowledge that a release of a hazardous substance equal to or greater than a reportable quantity has occurred. Under Section 311 of the CWA, EPA set 24 hours as the period to determine, for purposes of notification, whether a reportable quantity of hazardous substances had been released. Since the 24-hour period has been successfully used in the CWA Section 311 program and the regulated community is familiar with this time period, EPA proposes to use this 24-hour period under CERCLA to determine whether the reportable quantity of a substance has been

requirements of Sections 103 (a) and (b) (Section 101(22)).

released. When the amount of a substance released within a 24-hour period equals or exceeds its reportable quantity, the National Response Center must be notified immediately.

Under regulations implementing Section 311 of the CWA, EPA interpreted the application of RQs to mixtures and solutions containing hazardous substances: "[d]ischarges of mixtures and solutions are subject to these regulations only where a component hazardous substance of the mixture or solution is discharged in a quantity equal to or greater than its RQ" (44 FR 50767 (August 29, 1979)). This interpretation will apply to releases of hazardous substances under the Act as well. Thus, a release of 10 pounds of a solution which contains 1 pound of hazardous substance A and 9 pounds of non-hazardous substance B is not reportable if the RQ of hazardous substance A is 10 pounds. Similarly, a release of a mixture containing 70% of an RQ of hazardous substance A and 60% of an RQ of hazardous substance B is not subject to the notification requirements of Sections 103 (a) and (b).

An alternative approach is to apply the RQ to the mixture or solution as a whole. Under this approach, a release of 10 pounds of a solution which contains 1 pound of hazardous substance A and 9 pounds of non-hazardous substance B would be reportable if the RQ of hazardous substance A is 10 pounds or less. Similarly, the release of a mixture containing 70% of an RQ of hazardous substance A and 60% of an RQ of hazardous substance B would be reportable. This approach was not adopted because it would result in over-reporting. The Agency instead intends to focus its attention on those releases which are potentially most environmentally significant, ⁶ such as those releases in which the component hazardous substance is released in an amount that equals or exceeds the assigned RQ.

Any person in charge of a vessel or facility who is unsure as to whether any of the components in a released mixture exceed their RQs is strongly encouraged to report the release.

IV. Exemptions From the CERCLA Notification Requirements

There are four types of statutory exemptions from the notification requirements for releases of hazardous substances in reportable quantities:

⁶ As noted in the preamble to 40 CFR Part 117 of the CWA, it may not be valid to assume that the toxic properties of all different hazardous substances can be considered additive (44 FR 50767 (August 29, 1979)).

(1) Federally permitted releases as defined in Section 101(10);

(2) Application of pesticide products registered under the Federal Insecticide, Fungicide, and Rodenticide Act ("FIFRA");

(3) certain releases of hazardous wastes which are required to be reported under the provisions of the Resource Conservation and Recovery Act and which are reported to the NRC; and

(4) certain releases which are determined to be "continuous" under the provisions of Section 103(f)(2). This section discusses EPA's proposed interpretation of the scope of these statutory exemptions from the notification requirements of Sections 103(a) and (b).

A. Federally Permitted Releases

Congress did not intend for the notification requirements in Sections 103(a) and (b) of CERCLA to apply to the federally permitted releases defined in Section 101(10).

The laws authorizing the permit and regulations that control these releases provide for notification and such notification procedures should provide the same public benefits—especially regarding timely response—as would be provided in S. 1480. Notice is crucial to the removal and remedial operations which are central to the reported bill. The federally permitted release exceptions are not directed at avoiding notice, but rather to make it clear which provisions of law apply to discharging sources. (Sen. Rep. 96-848, 96th Cong., 2d Sess. 50 (1980)).

This section discusses the federally permitted releases.

1. *Releases from Point Sources with National Pollutant Discharge Elimination System (NPDES) Permits.* Section 101(10) identifies three types of releases from point sources with NPDES permits as federally permitted releases:

(A) discharges in compliance with a permit under section 402 of the Federal Water Pollution Control Act, (B) discharges resulting from circumstances identified and reviewed and made part of the public record with respect to a permit issued or modified under section 402 of the Federal Water Pollution Control Act and subject to a condition of such permit, (C) continuous or anticipated intermittent discharges from a point source, identified in a permit or permit application under section 402 of the Federal Water Pollution Control Act, which are caused by events occurring within the scope of relevant operating or treatment systems * * *

This language is identical to that used in Section 311(a)(2) of the CWA to exclude these releases from the term "discharge" with respect to EPA's hazardous substance spill response and prevention program. Under regulations

implementing Section 311 of the CWA, EPA has interpreted this language to exclude basically all discharges of hazardous substances from an NPDES point source that are associated with manufacturing or treatment processes and that were identified and considered in the issuance of the permit. This exemption also applies to discharges from NPDES point sources permitted by a state authorized to operate the NPDES permit program (40 CFR 117.12; 44 FR 58910 (October 12, 1979)). As Congress indicated, the interpretation of these provisions under Section 311 of the CWA and the implementing regulations will be continued for federally permitted releases under CERCLA (see Sen. Rep. 96-848, 96th Cong., 2d Sess. 47 (1980)).

2. *Releases Subject to CWA Section 404 Permits.* Discharges which comply with a legally enforceable permit for dredge or fill materials under Section 404 of the CWA are also federally permitted releases exempt from the notification requirements of CERCLA Sections 103(a) and (b). Before issuing these permits, the government reviews the substances to be discharged. The permits allowing the discharge of hazardous substances are issued only if no significant degradation of the aquatic environment will result. This exemption applies to discharges in compliance with the terms and conditions of either an individual or a general CWA Section 404 permit.

In regulations implementing Section 311 of the CWA, EPA exempted from the notification requirement not only those releases which were in compliance with Section 404 permits but also those which were not subject to permit requirements under Section 404 of the CWA (Sections 404(f) and 404(r)). These latter releases are not "federally permitted releases" for purposes of CERCLA; therefore, they must be reported. Releases in compliance with a legally enforceable permit under Section 404 of the CWA need not be reported.

3. *Releases from Facilities with Final RCRA Permits.* Releases from hazardous waste management facilities which have legally enforceable final permits under Section 3005 of RCRA are also exempted from notification if the permit specifically identifies the hazardous substances released and makes those substances subject to "a standard of practice, control procedure or bioassay limitation or condition, or other control on the hazardous substances in such releases" (Section 101 (10)(E)). Releases from hazardous waste management facilities with final RCRA permits issued by a state are also considered federally permitted releases for purposes of CERCLA.

EPA is presently in the process of promulgating regulations implementing the permit provisions of RCRA. Final standards have been set for existing storage facilities and incinerators and land disposal facilities (46 FR 2802 (January 12, 1981); 46 FR 7666 (January 23, 1981); 46 FR 12414 (February 13, 1981); 47 FR 32274 (July 26, 1982)). This exemption does not apply to hazardous waste management facilities which are in "interim status" pursuant to Section 3005(e). "Sites or facilities which have interim status under Section 3005(e) do not adequately utilize acceptable levels of technology, and do not qualify for this exclusion" (see Sen. Rep. 96-848, 96th Cong., 2d Sess. 48 (1980)). However, although Section 101(10)(E) does not exempt hazardous waste management facilities with interim status from the notification requirements if they release hazardous substances, such releases may fall within one of the limited exemptions to the notification requirements (e.g., Section 103(f)(1)) discussed below.

4. *Releases pursuant to Marine Protection, Research, and Sanctuaries Act Permits.* Section 101(10)(F) of CERCLA includes, in the definition of a federally permitted release, releases in compliance with legally enforceable permits issued under Section 102 (EPA ocean dumping permits) and Section 103 (Corps of Engineers permits for ocean dumping of dredged materials) of the Marine Protection, Research, and Sanctuaries Act. Pursuant to EPA regulations, applicants for ocean dumping permits must identify the physical and chemical properties of the materials to be discharged, and the permit must identify the materials which may be discharged (see 40 CFR Parts 221, 223). Similar procedures and criteria apply to issuing ocean dredging permits (see 33 CFR Part 324). These ocean dumping and ocean dredging permits cover substances that can be lawfully discharged. Releases of hazardous substances not specifically permitted are subject to the notification requirements of CERCLA Sections 103 (a) and (b).

5. *Underground Injections Authorized pursuant to the Safe Drinking Water Act.* Also exempted from the notification requirements by the definition of federally permitted release is "any injection of fluids" authorized under federal injection control programs or state programs submitted for federal approval pursuant to Part C of the Safe Drinking Water Act (and not disapproved by EPA) (Section 101(10)(G)).

EPA has published regulations establishing technical standards and criteria (40 CFR Part 146) and regulations governing approval of state programs and permit procedures (40 CFR Parts 122-124). Under the Safe Drinking Water Act, the states are to take the primary role in implementing the underground injection control program; EPA is to administer the program only if the state fails to submit an approvable program within a specified time period. Any underground injection wells permitted under a state program approved by EPA or under an EPA-administered program are considered federally permitted for purposes of CERCLA notification.

6. *Emissions Subject to Clean Air Act Controls.* Section 101(10)(H) of CERCLA includes in the definition of federally permitted release:

any emission into the air subject to a permit or control regulation under section 111, section 112, title I part C, title I part D, or State implementation plans submitted in accordance with section 110 of the Clean Air Act (and not disapproved by the Administrator of the Environmental Protection Agency), including any schedule or waiver granted, promulgated, or approved under these sections * * *.

Air emissions permits or control requirements focus on a limited number of pollutants: criteria pollutants and, in certain cases, designated hazardous pollutants. Stationary sources may emit hazardous substances that are not subject to a permit or control regulation, and therefore must be reported under CERCLA.

These substances may be hazardous substances under CERCLA because they were designated under some other environmental statute, rather than the Clean Air Act. The Agency recognizes that reporting of such releases may be required, even though the releases have been reviewed and permitted by EPA or a state, and are very unlikely to warrant federal response.

Controls on air releases of hazardous substances under the Clean Air Act may vary from state to state, so that the application of the federally permitted release exemption for air releases from the CERCLA notification provisions may also vary from state to state. For example, site-specific controls under state implementation plans may not contain requirements for controlling emissions of certain specific organic compounds that are emitted during the normal operation of stationary sources.

The Senate committee that drafted this exemption acknowledged that the Clean Air Act allows control of air pollutants to be achieved in various ways:

In the Clean Air Act, unlike some other Federal regulatory statutes, the control of hazardous air pollutant emissions can be achieved through a variety of means: express emissions limitations (such as control on the pounds of pollutant that may be discharged from a source during a given time); technology requirements (such as floating roof tanks on hydrocarbons in a certain vapor pressure range); operational requirements (such as start up or shut down procedures to control emissions during such operations); work practices (such as the application of water to suppress certain particulates); or other control practices. Whether control of hazardous substance emissions is achieved directly or indirectly, the means must be specifically designed to limit or eliminate emissions of a designated hazardous pollutant or a criteria pollutant. (Sen. Rep. 96-848, 96th Cong., 2d Sess. 49 (1980)).

The exemption applies to releases subject to a permit or control regulation and, as noted by the Committee, control mechanisms can take a variety of forms. There is a suggestion at the end of the passage that the control must be "specifically designed to limit or eliminate emissions of a designated hazardous pollutant or a criteria pollutant." EPA solicits comments on the extent to which this exclusion should apply to pollutants limited or eliminated by these control practices, but not explicitly mentioned as part of any requirements.

More generally, EPA is uncertain of the extent to which emissions from permitted stationary sources, if they contain CERCLA-designated substances, qualify for the federally permitted release exemption. The Agency solicits comments on the appropriateness of exempting emissions from permitted stationary sources from CERCLA's notification requirements on the grounds that they are federally permitted releases.

The Agency intends to conduct a more detailed investigation of this issue prior to promulgation of final RQ adjustments, to identify the extent of problems and potential solutions. Potential areas of investigation include:

- The kinds and quantities of CERCLA-designated substances released by stationary sources, to determine the extent to which the adjusted RQs proposed today would require stationary sources to notify the NRC under CERCLA;
- Whether such releases can appropriately be considered federally permitted releases under CERCLA;
- The scope of the term "continuous release," to determine the degree to which air releases from stationary sources may qualify for reporting under the continuous release provisions of Section 103(f)(2); and
- Separate air-release RQs for stationary sources, to determine whether higher RQs for air releases from stationary sources may

reduce reporting burdens, since EPA recognizes that the impact of releases from elevated sources (e.g., stacks) may be different than that from releases onto the ground or into water.

Air releases that are "continuous" and "stable in quantity and rate" may qualify for reporting under Section 103(f)(2). This section requires initial reporting "for a period sufficient to establish the continuity, quantity, and regularity of such release," and thereafter "annually, or at such time as there is any statistically significant increase in the quantity of any hazardous substance released." Among the types of releases the Agency is considering as falling within the scope of the term "continuous" are routine, anticipated, intermittent releases of hazardous substances that are incidental to the normal manufacturing or treatment processes or operations of facilities or vessels (see Section IV.D. of the Notification section of this preamble for further discussion).

The Agency has proposed only one RQ for each hazardous substance, regardless of the medium into which the substance is released. The rationale for this approach is discussed in the Reportable Quantity Adjustments section of this preamble. EPA might consider different RQs for releases into air, if an RQ adjustment procedure that specifically addressed impacts from air releases can be developed, and if such a change will significantly reduce the reporting burden associated with the current proposed RQ adjustments without undue environmental impact. The Agency solicits information concerning specific hazardous substances for which these proposed RQs may be particularly burdensome and comments on approaches to make the notification requirements for air releases of hazardous substances more appropriate.

Pending implementation of Section 103(f)(2), EPA will focus its enforcement efforts on episodic releases that may present a serious risk of harm to public health or welfare or the environment, rather than on continuous releases.

7. *Injections of Materials Related to Development of Crude Oil or Natural Gas Supplies.* CERCLA also considers as a federally permitted release:

any injection of fluids or other materials authorized under applicable state law (i) for the purpose of stimulating or treating wells for the production of crude oil, natural gas, or water, (ii) for the purpose of secondary, tertiary, or other enhanced recovery of crude oil or natural gas, or (iii) which are brought to the surface in conjunction with the production

of crude oil or natural gas and which are reinjected * * *. (Section 101(10) (I)).

EPA interprets this provision to include only those activities or materials which are specifically authorized by state law—rather than simply not prohibited—and to cover only those activities whose sole purpose is the production of crude oil, natural gas, or water, the recovery of crude oil or natural gas, or the reinjection of fluids brought to the surface from such production.

8. Introduction of Pollutants into Publicly Owned Treatment Works. Section 101(10) (J) of CERCLA exempts, as a federally permitted release, the introduction of pollutants into a publicly owned treatment work if two conditions are satisfied: (1) The pollutant is specified in pretreatment standards and is in compliance with the standards of Section 307 (b) and (c) of the CWA, and (2) the pollutant is specified in and is in compliance with enforceable requirements in a pretreatment program submitted by the state or local government for EPA approval. Pretreatment standards under Section 307 (b) and (c) of the CWA are of two types: pollutant-specific standards for certain industrial categories and a generic prohibition against discharges which may inhibit or upset the continued safe operation of the municipal treatment system.

There are at present few industries with established pretreatment standards. Many industrial facilities would, therefore, be unable to qualify for this exemption, despite their compliance with the generic prohibitions and local pretreatment standards.

Under Section 311 of the CWA, EPA published regulations which narrowly define the manner in which mobile sources are authorized to discharge hazardous substances into publicly owned treatment works (40 CFR 117.13(b)). This regulation remains effective under this Act.

9. Releases of Source, Byproduct, or Special Nuclear Materials. Federally permitted releases also include any releases of source, byproducts, or special nuclear material, as defined by the Atomic Energy Act of 1954, which comply with a legally enforceable license, permit, regulation, or order issued pursuant to the authority of the Atomic Energy Act (see Section 101(10) (K)).

Radionuclides are generically listed as hazardous air pollutants under Section 112 of the Clean Air Act and therefore are hazardous substances under CERCLA. Radionuclides include source, special nuclear, and byproduct material.

Releases of these materials in quantities equal to or greater than the RQ are generally subject to the notification requirements, unless they are federally permitted releases.⁷

The Nuclear Regulatory Commission and states in which federal authority has been discontinued pursuant to agreement with the Nuclear Regulatory Commission issue a variety of general and specific licenses which govern the handling, use, storage, and disposal of source, byproduct, and special nuclear material [see generally 10 CFR Parts 20, 30-35, 40, 50, 60, 61, 70, 71, and 150]. These activities, if in compliance with legally enforceable state or federal licenses, are not subject to the notification requirements of Sections 103(a) and (b) of CERCLA.

The Nuclear Regulatory Commission regulations provide for reporting differences in inventories of these materials (see 10 CFR Part 70). To avoid duplicate reporting, EPA is not requiring notification of inventory differences to the National Response Center under CERCLA. The Nuclear Regulatory Commission also provides for reporting releases of radioactive material (10 CFR Part 20). As discussed below, EPA is currently reviewing these requirements to identify areas of duplicate reporting.

The regulations of the Nuclear Regulatory Commission contain several important exemptions from its provisions, based generally on the small quantities of materials involved or the low levels of radioactivity they emit. Persons handling these exempted materials are not subject to legally enforceable regulations and, therefore, releases of these materials into the environment are not "federally permitted" releases. Notification is therefore required under CERCLA; however, the Agency does not anticipate that such releases will frequently exceed the one-pound reportable quantity currently applicable to radionuclides under the statute.

B. Pesticide Products

Section 103(e) of CERCLA exempts from the notification provisions of the Act "the application of a pesticide product registered under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (and) the handling and storage of such a pesticide product by an agricultural producer." EPA interprets the application of pesticides to refer to the normal application of

registered pesticides (and pesticides used in accordance with FIFRA Section 5 experimental use permits or FIFRA Section 18 emergency exemptions) in ways which are not inconsistent with the pesticides' labeling. This interpretation is consistent with the existing regulations promulgated under the authority of Section 311 of the CWA (40 CFR 117.11(c)). Congress did not intend a broad exemption covering all possible uses, disposals, or applications of pesticides—particularly since EPA and the states have found that pesticides are often found at uncontrolled hazardous waste sites. The Senate Committee on Environment and Public Works, for example, explained:

It should also be clear that the notice and penalty provisions do not apply to such routine field applications. Accidents or intentional disposals which result in the release of a pesticide in other than its intended field application would, of course, be subject to the notice provision of this bill. Only in this manner could the preventive response mechanisms of the bill operate to protect human health. (Sen. Rep. 96-848, 96th Cong., 2d Sess. 50 (1980)).

One of the environmental incidents repeatedly mentioned in support of the bill involved contamination of drinking water supplies by waste pesticides (see 126 Cong. Rec. S14967 (daily ed. November 24, 1980) (remarks of Sen. Stafford)). Spills, improper application, and improper disposal of pesticides are within the scope of notification provisions if hazardous substances are released in reportable quantities.

Accidents which release pesticides into the environment are subject to the notification provisions of Sections 103 (a) and (b). In discussing federally permitted releases, Senator Randolph pointed out that "[a]ccidents—whatever their cause—which result in, or can reasonably be expected to result in releases of hazardous pollutants would not be exempt from the requirements and liabilities of this bill" (126 Cong. Rec. S14965 (daily ed., November 24, 1980)). This reasoning applies with equal force to the exemption for pesticides under Section 103(e).

C. Releases Reported Under RCRA

Section 103(f)(1) of CERCLA exempts from the notification requirements of Sections 103 (a) and (b) releases of hazardous substances which are subject to reporting requirements (or specifically exempted from such reporting) under Subtitle C of RCRA and have been reported to the NRC.

Congress recognized that regulations may be necessary to integrate fully the RCRA reporting provisions with the

⁷ Releases of source, byproduct, or special nuclear material resulting from a nuclear incident subject to the financial protection requirements of Section 170 of the Atomic Energy Act are excluded from the Act's definition of release. [See Section 101 (22).]

notification requirements of CERCLA Section 103 (see 126 Cong. Rec. S14965 (daily ed., November 24, 1980) (Remarks of Sen. Randolph)). The RCRA regulations create extensive reporting and recordkeeping requirements for persons handling hazardous waste (40 CFR Parts 260-267). For example, 40 CFR 265.56 requires owners and operators of hazardous waste facilities with interim status to report all releases which could threaten human health, or the environment, outside the facility, to either the NRC or the government official designated as the On-Scene Coordinator for that geographical area (pursuant to 40 CFR Part 300). When releases are reported to the NRC pursuant to this RCRA requirement, CERCLA notification requirements have been fulfilled. The Agency is examining RCRA reporting requirements in connection with CERCLA's notification requirements to determine whether adjustments to either RCRA's or CERCLA's notification requirements are appropriate. The Agency requests comments on the impact of the RCRA regulations on the CERCLA notification requirements.

D. Continuous Releases

Section 103(f)(2) of CERCLA exempts certain releases from the general notification requirements of Sections 103(a) and 103(b). Releases may be exempted if they are "continuous," "stable in quantity and rate," and notification has been given under Sections 103 (a) and (b) "for a period sufficient to establish the continuity, quantity, and regularity" of the release or under Section 103(c) (which relates to notification of the existence of certain facilities that are or have been used for storage, treatment, or disposal of hazardous wastes). Notification of continuous releases must be given "annually, or at such a time as there is any statistically significant increase" in the quantity of the hazardous substance being released.

The main function of CERCLA's notification requirements is to alert government officials to the existence of a situation that may require a government response to protect the public health or welfare or the environment. Since episodic releases are by definition "unanticipated," they must be reported as they occur. Continuous releases, on the other hand, may be predictable and can either be literally continuous or recurring. Congress recognized in Section 103(f)(2) that CERCLA's objectives would be satisfied—in the case of continuous releases—by less frequent notification.

Thus, instead of reporting every release as it occurs, persons in charge are allowed to report certain continuous releases less often under Section 103(f)(2). The purpose of this section is to reduce unnecessary reports of releases. The rationale for this approach is that when a release is regular and of stable quantity, the Agency does not need to be notified each time such a release occurs in order to have the information necessary to decide whether a response to the release is necessary. Section 103(f)(2) provides, however, that notification must still be given (1) under Section 103(c) or "for a period sufficient to establish the continuity, quantity, and regularity of such release" and (2) "annually, or at such time as there is any statistically significant increase in the quantity of any hazardous substance or constituent thereof released, above that previously reported or occurring."

The Agency is considering development of a policy to identify:

- The types of releases that qualify for the limited exemption under Section 103(f)(2), and
- The Section 103(f)(2) notification scheme.

Pending implementation of Section 103(f), EPA will focus its enforcement efforts on episodic releases (e.g., accidental, one-time, non-routine releases) exceeding the RQs proposed today which may present a serious risk of harm to human health or welfare or the environment, rather than on continuous releases (e.g., routine, continuous, or anticipated intermittent releases which are incidental to normal manufacturing or treatment processes or operations of facilities or vessels).

1. *Types of Releases.* The Agency is considering defining releases that are "continuous" and "stable in quantity and rate" to include:

- Literally continuous releases that enter the environment 24 hours a day, 365 days a year. Examples include hazardous substances leaking from pipes or lagoons into surface water, leaching into the soil or groundwater, or evaporating;
- Releases continuous during operating hours, such as releases from some continuous industrial processes;
- Releases from batch operations; and
- Routine, anticipated, intermittent releases of hazardous substances that are incidental to the normal manufacturing or treatment processes or operations of facilities or vessels. Examples include releases from relief valves, the maintenance of pollution control equipment, charging of coke oven batteries, and tank cleaning operations.

In order for a continuous release which is stable in quantity and rate to be subject to Section 103(f)(2), notification must be given pursuant to

Section 103(c), or under Sections 103 (a) and (b) for a "period sufficient to establish the continuity, quantity, and regularity" of the release. Reporting under Section 103(c) is addressed in 46 FR 22144 (April 15, 1981) and will not be discussed further here. The Agency is considering several approaches for defining the "period sufficient," including:

- Establishing a single period (such as a week, a month, six months, or a year) of reporting that will be required for all releases; or
- Specifying the number of reports, instead of a specific time period, to establish the "period sufficient."

EPA solicits comments on these or any other approaches for implementing the Section 103(f)(2) notification provisions.

2. *Section 103(f) Notification Scheme.*

The Agency intends to develop a notification system for continuous releases. An approach under consideration involves an annual written notification identifying the hazardous substance being released, the quantity and rate of such release, and the environmental media affected. The Agency does not anticipate that this written notification would be necessarily costly or elaborate; it does not anticipate that sophisticated analysis to determine the constituents of a release or that special monitoring to determine the quantity or rate of a release will be needed. A new notification (either written or by telephone) would be required if there is a statistically significant increase in the amount, or statistically significant change in the type, of hazardous substance being released. EPA is also considering whether applications for federal permits containing information on the nature of these releases might suffice to show that a release qualifies for the continuous release exemption.

Three alternatives for defining "statistically significant increase" are under consideration:

- Requiring reporting whenever a release falls outside some expected range based on statistical tests, such as the "Student's t" test;
- Requiring reporting whenever the amount released exceeds the amount ordinarily released by some pre-established factor, such as 2, 5, or 10 times the daily average; or
- Letting the releaser determine what is a statistically significant increase.

EPA requests comments specifically on the most feasible approach for continuous release notification, the information to be required, what the Agency should consider a statistically significant increase in the release, and

any other relevant issues. EPA hopes that such information will enable it to develop a system which imposes a minimal burden on both the regulated community and the government, while achieving the underlying statutory objectives.

V. Duplicate Reporting

CERCLA reporting requirements may duplicate or overlap with reporting requirements for some hazardous substance releases under other federal or state statutes. For example, a possible area of overlap exists between CERCLA and the Nuclear Regulatory Commission's requirements for reporting releases of certain radioactive substances. Another potential area of duplicative reporting is the overlap between CERCLA and the reporting requirements associated with the ground water monitoring requirements for facilities with interim status pursuant to RCRA (see 40 CFR 265.93). Overlaps may also exist with reporting systems established under state law.

Congress did not intend that the CERCLA reporting requirements duplicate existing notification procedures (see 126 Cong. Rec. S14965 (daily ed., November 24, 1980) (remarks of Sen. Randolph)). To ensure that the notification requirements established by CERCLA will be neither duplicative nor unduly burdensome, EPA is currently reviewing other relevant federal and state reporting requirements to identify areas where it may be possible, in the future, to eliminate redundancy and enhance the overall effectiveness of the notification procedures. For example, permit applications under other environmental statutes may supply sufficient information to show that a releaser qualifies for the alternative form of notification under Section 103(f)(2).

If reporting requirements under other statutes do not fully address the goals of CERCLA, the CERCLA notification provisions would be applicable. For example, a federal notification system for releases of hazardous materials as defined by the Department of Transportation (DOT) exists under the Hazardous Materials Transportation Act (see 49 CFR 171.15). Under the DOT regulations, immediate telephone notification to the NRC is triggered by severe accidents that cause death, injury, or serious property damage, or by release of etiologic and radiologic materials, poisons, and other agents (46 FR 17738 (March 19, 1981)). Written reports are required for all other releases. Because the DOT requirements do not cover all releases encompassed by CERCLA, the Sections 103 (a) and (b)

reporting requirements currently apply and those releases must be reported to the National Response Center.

The Agency recognizes that shippers and carriers of hazardous substances, in order to comply with CERCLA notification requirements, will rely on the U.S. Department of Transportation's ("DOT's") regulatory mechanisms. The Agency intends to coordinate today's rulemaking with DOT regulations under the Hazardous Materials Transportation Act and DOT's regulatory responsibility under Section 306 of CERCLA. EPA will work with DOT to develop a coordinated and integrated set of regulations so that shippers and carriers of hazardous substances will be subject to only one set of regulations. The Agency requests comments on the proper manner of coordinating the various regulations governing releases of hazardous substances.

Reportable Quantity Adjustments

I. Introduction

Section 102(b) establishes a reportable quantity of one pound for all hazardous substances other than those with different RQs established under Section 311 of the Clean Water Act. Congress enacted this provision in part to ensure that reporting of releases would begin immediately upon enactment of CERCLA, because reporting is essential for response.

The statutory RQs were intended to be of temporary duration pending EPA review and adjustment of those RQs. To that effect, EPA committed to Congress in late 1980 to revise those reportable quantities (126 Cong. Rec. H11792 (December 3, 1980)). This rulemaking proposes adjustments to the statutory RQs based upon specific scientific and technical criteria which correlate with the possibility of hazard or harm upon the release of a substance in a reportable quantity. These revised RQs, therefore, enable the Agency to focus its resources on those releases which are most likely to pose potential threats to public health and welfare and the environment. Such RQ adjustments will also relieve the regulated community from the burden of making reports of releases which are unlikely to pose such threats.

Analysis is complete for 387 of the 696 hazardous substances designated under CERCLA. Of these 387 substances, today's rule proposes to raise 177 of the RQs established under CERCLA, to lower 28 of the RQs, and to leave the remaining 182 RQs unchanged. Eighty-nine of the 696 hazardous substances are hazardous waste streams under RCRA, rather than

specific or generic substances. Analysis of 26 of these hazardous waste streams is complete. Today's rule proposes to raise the RQs of 15 of these waste streams and to leave the other 11 unchanged. These 26 are included in the 387 mentioned above. Adjustments to the statutory RQs for the other 309 substances will be proposed, if appropriate, when further analysis is complete.

The primary purpose of notification is to ensure that releasers notify the government so that the government can assess the need to respond to the release. The different RQ levels do not reflect a determination that a release of a substance will be hazardous at the RQ level and not hazardous below that level. EPA has not attempted to make such a determination because the actual hazard will vary with the unique circumstances of the release, and extensive scientific data and analysis would be necessary to determine the hazard presented by each substance in a number of plausible circumstances. Instead, the RQs reflect the Agency's judgment that the federal government should be notified of releases to which a response might be necessary. The reportable quantities, in themselves, do not represent any determination that releases of a particular size are actually harmful to public health or welfare or the environment.

Many other considerations besides the quantity released affect the government's decision concerning whether and how it should respond to a particular release. The location of the release, its proximity to drinking water supplies or other valuable resources, the likelihood of exposure or injury to nearby populations, and other factors must be assessed on a case-by-case basis. The reporting requirement is, however, the trigger for assessments of these considerations to be made.

Because CERCLA's RQ adjustment methodology differs from that used pursuant to Section 311 of the Clean Water Act ("CWA"), some of the RQs being proposed today are not the same as those under the CWA. A person in charge need not report a release twice; one report to the NRC suffices. As discussed later in this preamble, EPA is also proposing today to adjust the CWA Section 311 RQs to be identical with those proposed under CERCLA.

II. Summary of Methodology Underlying the Reportable Quantity Adjustments

The Agency has wide discretion in adjusting the statutory RQs for hazardous substances under CERCLA:

In determining reportable quantities under this paragraph (Section 3(a)(2) of S. 1480), the President may consider any factors deemed relevant to administering the reporting requirements or the President's other responsibilities under this Act. Administrative feasibility and practicality should be primary factors. In addition, the President may revise such regulations from time to time if under-reporting of over-reporting is occurring under existing regulations (Sen. Rep. 96-848, 96th Cong., 2d Sess. 29 [1980]).

The Agency found that it was practical to use portions of the RQ methodology established pursuant to Section 311 of the Clean Water Act in adjusting the CERCLA RQs because the regulated community and government response agencies are familiar with the CWA Section 311 reporting requirements. Section 311(b)(4) of the CWA requires reporting of discharges of certain hazardous substances into navigable waters (see 44 FR 50766 (August 29, 1979); 40 CFR Part 117). Pursuant to CWA Section 311, EPA determined reportable quantities for discharges by correlating aquatic animal toxicity ranges with five reporting categories, i.e., 1-, 10-, 100-, 1000-, and 5000-pound levels. The approach proposed today utilizes these five RQ levels but applies other criteria in addition to aquatic toxicity. The six "primary criteria" which are used to adjust RQs are:

- Aquatic Toxicity;⁸
- Mammalian Toxicity;⁸
- Ignitability;
- Reactivity;
- Other Toxic Effects;⁹ and
- Carcinogenicity.

Certain of the Section 101(14) hazardous substances have been identified as potential carcinogens using the Monographs of the International Agency for Research on Cancer and the Annual Report on Carcinogens of the National Toxicology Program. Some of these are known human carcinogens. RQs are not currently being adjusted on the basis of carcinogenicity because the Agency has not completed collecting and analyzing data on carcinogenicity. When the analysis is completed, it will be published in a separate notice of proposed rulemaking. Until final promulgation of adjusted RQs for carcinogens, their RQs (like those for all other CERCLA hazardous substances) will be left at the statutory level.

In addition, the analysis of other toxic effects is not yet complete for all

hazardous substances. For those substances for which this analysis is still underway, RQs are not being adjusted by today's rulemaking. Adjusted RQs will be proposed when this analysis is complete.

Each substance is evaluated according to the applicable "primary criteria" and an RQ value is determined for each applicable criterion (see Exhibits 1 through 5). The "primary criteria" RQ for each hazardous substance is the lowest value of all the applicable criteria. For example, if the Agency is able to evaluate hazardous substance A for aquatic toxicity and mammalian toxicity and sets an RQ of 100 pounds on the basis of aquatic toxicity and 1000 pounds on the basis of mammalian toxicity, the 100-pound value will be the applicable "primary criteria" RQ. This procedure is consistent with the purpose of the RQ as a trigger for notification.

The Agency then evaluates each substance according to the following "secondary criteria," which are natural dissipation processes:

- Biodegradability;
- Hydrolysis; and
- Photolysis.

The applicable "primary criteria" RQ is raised one level if an analysis of these "secondary criteria" indicates that the substance naturally dissipates when released into the environment.

The criteria selected to adjust RQs correlate with the potential harm to public health or welfare or the environment upon the release of a hazardous substance in a reportable quantity. The likelihood of harm presented by a release of these substances is a major consideration in EPA's adjustments of the RQs. No attempt has been made to correlate the RQ adjustments with actual harm or hazard. Actual harm will vary with the circumstances of the release.

Simply because two substances have the same proposed RQ does not mean that they may pose the same danger to the public health or welfare or the environment. A substance with a 100-pound RQ on the basis of mammalian toxicity may not pose the same potential hazard as a substance with a 100-pound RQ set on the basis of ignitability. The RQ only reflects the Agency's determination that the government needs to know about releases of substances which are equal to or exceed that RQ so that a decision can be made concerning the appropriate response action, if any.

Table 302.4 lists the CERCLA hazardous substances, the statutory RQs for those substances, and the proposed

RQs for many of those substances. The Agency has not proposed adjusted RQs for known or suspected human carcinogens and radionuclides, as well as for some substances undergoing evaluation for other toxic effects. The Agency is currently collecting and evaluating data on carcinogenicity, radionuclides, and substances which exhibit other toxic effects. Adjusted RQs for these substances will be proposed, as appropriate, in a future rulemaking. Until final rules are promulgated, the statutory RQs apply, rather than the proposed RQs.

The method proposed to adjust RQs is discussed in greater detail below and in the Background Document to Support the Notice of Proposed Rulemaking Pursuant to CERCLA Section 102(b), available for inspection at Room S-398, U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460.

III. Number of Reportable Quantity Levels and their Values

For purposes of RQ adjustments under CERCLA, EPA has adopted the five RQ levels of 1, 10, 100, 1000 and 5000 pounds originally established pursuant to CWA Section 311 (see 40 CFR Part 117). The Agency adopted the CWA five-level system primarily because (1) it has been successfully used pursuant to the CWA, (2) the regulated community is already familiar with these five levels, and (3) it distinguishes the broad range of potential harm posed by CERCLA hazardous substances.

The Agency considered adopting a notification system with either two or three RQ levels, because of the possibility that such a system would be easier to understand and to administer. EPA rejected these alternatives because it found that the data correlating the RQs with potential harm were so wide-ranging that a five-level ranking system was necessary. It would not be equitable to assign substances to only two or three RQ levels; a five-tier system more adequately reflects the relative differences in potential harm presented by the hazardous substances than would a two- or three-tier system.

EPA has decided to designate pounds (kilograms) as the unit of measurement for all RQs proposed today. RQs for hazardous substances were designated in pounds in CERCLA Section 102 and pursuant to CWA Section 311. Pounds provide a uniform measure not only for solids, but also for liquids and gases. EPA considered setting the RQs for hazardous substances in different units of measurement corresponding to the form of the substance released, i.e.,

⁸Toxicity is used here to refer to acute toxicity, specifically lethality.

⁹Other toxic effects considered here include toxicity due to single, repeated, or continuous exposure from a single release or multiple releases of a hazardous substance.

gallons for liquids, pounds for solids, or cubic feet for gaseous materials. This alternative was rejected because it would be much more confusing for a releaser to determine whether a reportable quantity had been released if different units were used for different forms of the same hazardous substance. The only exceptions to this approach are radionuclides, which are discussed elsewhere in this preamble.

Section 102(a) of CERCLA authorizes, and the legislative history encourages, the Administrator to set a single reportable quantity for any hazardous substance, regardless of the medium into which that substance is released. In order to develop simple and practical notification provisions, the Agency is establishing a single RQ for each hazardous substance. As the legislative history indicates:

The provision intentionally omits from the requirement to determine "reporting" quantities any reference to harm or hazard. A single quantity is to be determined for each hazardous substance, and this single quantity requires notification upon release into any environmental medium. It would be virtually impossible to determine a single quantity applicable to all media while at the same time linking such quantity to any subjective concept of harm.

It is essential that such quantities be relatively simple for those subject to notification requirements to understand and comply with. Since releases in such quantities trigger notification requirements, but do not, in and of themselves, give rise to other liabilities under this Act, the President's broad discretion to select quantities will not unfairly burden those persons subject to the Act (Sen. Rep. 96-848, 96th Cong., 2d Sess. 29 (1980)).

If multiple RQs which vary in accordance with the environmental media into which the substance is released were established, it would be more difficult for the regulated community to comply with the reporting requirements. Since releases often occur into more than one medium, the releaser, under a multi-RQ format, would be uncertain which RQ would apply. Consequently, the multiple RQ approach is not being used by the Agency in this proposal. The Agency solicits comments concerning situations where different RQs may be appropriate for different media.

IV. Use of Criteria to Adjust Reportable Quantities

This section discusses the six primary criteria and the three secondary criteria used to propose adjusted RQs.

A. Primary Criteria

The proposed strategy consists of six primary criteria:

1. Aquatic Toxicity;
2. Mammalian Toxicity (including oral, dermal, and inhalation toxicities);
3. Ignitability;
4. Reactivity;
5. Other toxic effects; and
6. Carcinogenicity.

Originally, the Agency considered using only aquatic toxicity for RQ adjustments because aquatic toxicity had been used to establish RQs pursuant to the CWA. The Agency determined, however, that additional characteristics of potential hazard to human health or welfare or the environment should be taken into account. Consequently, in addition to aquatic toxicity, five other primary criteria and three secondary criteria are being applied.

1. Aquatic Toxicity. For aquatic toxicity, the categories established pursuant to Section 311 of the CWA are used (see Exhibit 1). Each of these categories is linked to one of the five RQ levels (1, 10, 100, 1000, or 5000 pounds). The RQ value based on aquatic toxicity is identical to the RQ promulgated under CWA Section 311 except where the use of updated aquatic toxicity data has resulted in different RQs. For 22 substances, the Agency has updated the aquatic toxicity data used to set the CWA Section 311 RQs. For 11 of these 22 substances, RQs are being proposed on the basis of this updated data. Four of these would have been lowered on the basis of other criteria even in the absence of revised aquatic toxicity data. For 10 other of these substances, adjusted RQs are not proposed because analysis is still underway for other toxic effects and/or carcinogenicity. One other RQ is not lowered because of the application of the secondary criteria.

A lower RQ is proposed for PCBs on the basis of revised aquatic toxicity data. Under CWA Section 311, the RQ for PCBs was originally set at 10 pounds; in today's proposed rulemaking, a 1-pound RQ is assigned. Because of the widespread use of PCBs, the Agency is concerned about the effect of this change on the number of release notifications made by the regulated community. Increased notification may result from reports of ruptures of transformers and capacitors containing PCBs in electrical transmission systems. The Agency requests data, information, and comments on the likely number of notifications and on the effect of these notifications on protection of public health and welfare and the environment.

EXHIBIT 1.—CATEGORIES FOR REPORTABLE QUANTITY ASSIGNMENTS PURSUANT TO CWA SECTION 311

RQ pounds	Aquatic toxicity	Category
1	LC ₅₀ < 0.1 mg/liter	X
10	0.1 mg/liter < LC ₅₀ < 1 mg/liter	A
100	1 mg/liter < LC ₅₀ < 10 mg/liter	B
1,000	10 mg/liter < LC ₅₀ < 100 mg/liter	C
5,000	100 mg/liter < LC ₅₀ < 500 mg/liter	D

* "LC₅₀" refers to that concentration of material which is lethal to one-half of the test population of aquatic animals upon continuous exposure for 96 hours. (See 40 CFR 116.14).

Source: 43 FR 10492 (March 13, 1978).

2. Mammalian Toxicity. Three types of mammalian toxicity were evaluated: oral, dermal, and inhalation toxicities. A five-level scale was devised for each. (see Exhibit 2). The RQ chosen for mammalian toxicity represents the lowest of the values derived from these three scales.

A substance was rated as toxic on the basis of its LC₅₀ or LD₅₀ value, which is the concentration or dose of a substance which causes the death of 50% of a defined experimental animal population. Upper-bound toxicity values were identified for each of the three scales. These values were correlated with a 5000-pound RQ value. The upper-bound toxicity limit of 200 mg/kg for dermal toxicity was adopted from toxicity screening criteria considered for designating hazardous substances under the Clean Water Act (40 FR 59966 (December 30, 1975)). The upper-bound toxicity limit of 2,000 ppm for inhalation toxicity was adopted from a study performed by the National Academy of Sciences for the U.S. Coast Guard (USCG-D-113-74, System for Evaluation of the Hazards of Bulk Water Transportation of Industrial Chemicals, February 1974). An upper-bound oral (ingestion) toxicity value of 500 mg/kg was adopted based on the assumption of a "standard man" (70 kg body weight, swallow volume of 21 cubic centimeters) being exposed to a situation which would allow him to take one swallow of a hazardous substance. (The one swallow assumption for a 15 kg child also yields a 500 mg/kg upper oral toxicity limit.)

Once the upper-bound toxicity levels were chosen, the toxicity ranges in Exhibit 2 for the 1-, 10-, 100-, 1000-, and 5000-pound reportable quantity categories were scaled for mammalian toxicity in the same ratios as the ranges for aquatic toxicity in Exhibit 1. High RQs (1000 or 5000 pounds) were assigned to substances with low toxicity, while low RQs (1 or 10 pounds) were assigned to substances with high toxicity.

EXHIBIT 2.—CATEGORIES FOR REPORTABLE QUANTITY ADJUSTMENTS BASED ON MAMMALIAN TOXICITY *

RQ (pounds)	Mammalian Toxicity (oral)	Mammalian Toxicity (dermal)	Mammalian Toxicity (inhalation)
1.....	LD ₅₀ ^b <0.1 mg/kg.....	LD ₅₀ <0.04 mg/kg.....	LC ₅₀ ^c <0.4 ppm.
10.....	0.1 mg/kg < LD ₅₀ < 1 mg/kg.....	0.04 mg/kg < LD ₅₀ < 0.4 mg/kg.....	0.4 ppm < LC ₅₀ < 4 ppm.
100.....	1 mg/kg < LD ₅₀ < 10 mg/kg.....	0.4 mg/kg < LD ₅₀ < 4 mg/kg.....	4 ppm < LC ₅₀ < 40 ppm.
1,000.....	10 mg/kg < LD ₅₀ < 100 mg/kg.....	4 mg/kg < LD ₅₀ < 40 mg/kg.....	40 ppm < LC ₅₀ < 400 ppm.
5,000.....	100 mg/kg < LD ₅₀ < 500 mg/kg.....	40 mg/kg < LD ₅₀ < 200 mg/kg.....	400 ppm < LC ₅₀ < 2000 ppm.

* For a detailed explanation of the derivation of these categories, see Background Document to Support the Notice of Proposed Rulemaking Pursuant to CERCLA Section 102(b).

^b "LD₅₀" refers to that dose of a substance expected to cause the death of 50 percent of a defined experimental mammal population.

^c "LC₅₀" refers to that concentration of a substance in the air that is expected to cause the death of 50 percent of a defined experimental mammal population.

Although the three mammalian toxicity scales and their respective RQ categories and poundage levels are included in Exhibit 2, this does not imply that the individual scales are equivalent to each other. Each scale is independent; the same ranking on different scales does not necessarily represent equivalent potential danger to public health or welfare or the environment.

3. **Ignitability.** A five-level scale was also developed for ignitability (see Exhibit 3). The Agency adopted, in large part, the ignitability scale developed by the National Academy of Sciences (NAS) for the U.S. Coast Guard (see USCG-D-113-74, System for Evaluation of the Hazards of Bulk Water Transportation of Industrial Chemicals, February 1974). The NAS ignitability scale provides the following five categories:

- Extremely Hazardous—Flash Point (FP) (cc) ¹⁰ <100° F (37.8° C) and Boiling Point (BP) ¹⁰ <100° F (37.8° C).
- Highly Hazardous—FP (cc) <100° F (37.8° C) and BP >100° F (37.8° C).
- Hazardous—100° F (37.8° C) < FP(cc) <140° F (60° C).
- Slightly Hazardous—FP (cc) >140° F (60° C).
- Insignificant Hazard—Noncombustible.

EXHIBIT 3.—CATEGORIES FOR REPORTABLE QUANTITY ADJUSTMENTS BASED ON IGNITABILITY *

RQ (pounds)	Ignitability (fire)
1.....	No 1-pound RQs on the basis of ignitability.
10.....	Pyrophoric or self-ignitable.
100.....	FP _{cc} ^b <100° F, BP _{cc} < 100° F.
1,000.....	FP _{cc} <100° F, BP >100° F.
5,000.....	100° F < FP _{cc} <140° F.

* For a detailed explanation of the derivation of these categories, see Background Document to Support the Notice of Proposed Rulemaking Pursuant to CERCLA Section 102(b).

^b "FP_{cc}" refers to the flash point, the temperature at which a substance forms an ignitable mixture with the air at the surface of the substance, measured using the closed cup test.

^c "BP" refers to the boiling point, the temperature at which a liquid boils.

This scale does not correlate these categories with RQ levels; the Agency established the correlation between ignitability categories and RQ levels as described below.

The Agency adjusted the NAS scale by adding a new category, "pyrophoric" substances (those substances capable of igniting spontaneously). The "pyrophoric" category was added because the Agency believes that spontaneous ignitability is an important potential hazard that should be considered in adjusting RQs. The Agency also modified the NAS scale by deleting the "non-combustible" and "slightly hazardous" categories. The Agency did not use the "non-combustible" category because releases of non-combustible materials do not warrant government response on the basis of ignitability. The "slightly hazardous" (flash point >140° F) category was deleted because the RCRA regulations use 140° F as the cut-off point for regulating liquid hazardous wastes on the basis of ignitability. (See 40 CFR § 261.21.) Therefore, the Agency has determined that substances with a flash point above 140° F do not pose a sufficient potential hazard to warrant a 5000-pound RQ on the basis of ignitability.

The Agency decided to use four rather than five RQ levels for ignitability. The 1-pound RQ level was abandoned because small releases (less than 10 pounds) of flammable substances, if ignited, will generally be consumed so quickly that any federal government response action would be infeasible. Since notification of these releases would generally not trigger any federal government response activities, the Agency eliminated the 1-pound RQ level for the ignitability criterion. The Agency then assigned RQ values of 10, 100, 1000 and 5000 pounds to the revised NAS ignitability scale.

4. **Reactivity.** Five-level scales were developed for reactivity (see Exhibit 4) based in large part upon NAS scales developed for the U.S. Coast Guard. The NAS established two scales for reactivity: reactivity with water and self-reaction. The NAS scales provide these categories:

	Water reaction	Self-reaction
Extremely hazardous.	e.g., SO ₃	Self-reaction may cause explosion or detonation.
Highly hazardous.	e.g., oleum, chlorosulfonic acid.	May polymerize, requires stabilizer.
Hazardous.	e.g., NH ₃ , HCl.....	Contamination may cause polymerization, no inhibitor required.
Slightly hazardous.	e.g., Cl ₂	May polymerize with low heat evolution.
Insignificant hazard.	No appreciable reaction.	No appreciable self-reaction.

The Agency established the correlation between these categories and RQ levels as described below.

The Agency adjusted the NAS reactivity with water scale by adding a new category, "inflames" with water. The "inflames" with water category was added because the Agency believes that the potential hazard caused by inflaming with water should be considered in adjusting RQ values. The Agency further modified the reactivity with water scale by deleting the "no appreciable reaction" and "slightly hazardous" categories. The "no appreciable reaction" category was deleted because the federal government need not be informed of releases on the basis of their reactivity with water if no appreciable reaction will occur. The "slightly hazardous" category was deleted because substances falling into this category, such as chlorine, do not pose a sufficient potential hazard to warrant a 5000-pound RQ on the basis of reactivity with water.

EXHIBIT 4.—CATEGORIES FOR REPORTABLE QUANTITY ADJUSTMENTS BASED ON REACTIVITY *

RQ (pounds)	Reactivity *	
	With water	Self-reaction
1.....	No 1 pound RQs on the basis of reactivity.	
10.....	Inflames e.g., Na, CaC ₂ .	Extreme self-reaction; may cause explosion or detonation.
100.....	Extreme reaction e.g., SO ₃ .	High; may polymerize; requires stabilizer.
1,000.....	High reaction e.g., oleum.	Moderate; contamination may cause polymerization; no inhibitor required.

¹⁰ These terms are defined in Exhibit 3.

EXHIBIT 4.—CATEGORIES FOR REPORTABLE QUANTITY ADJUSTMENTS BASED ON REACTIVITY —Continued

RQ (pounds)	Reactivity *	
	With water	Self-reaction
5,000	Moderate reaction e.g., NH ₃ .	Slight; may polymerize with low heat release.

* For a detailed explanation of the derivation of these categories, see Background Document to Support the Notice of Proposed Rulemaking Pursuant to CERCLA Section 102(b).

^b Based on heat release.

Similarly, the Agency adjusted the NAS self-reaction scale by deleting the "no appreciable reaction" category because the Agency believes that releases of substances would not warrant response on the basis of their self-reaction when no appreciable reaction will occur.

For both the reactivity with water and self-reaction scales, only four (rather than five) RQ levels were utilized by the Agency. The 1-pound RQ level was not used for adjusting RQs on the basis of reactivity because small releases (less than 10 pounds) of reactive substances will generally be consumed so quickly that any federal government response action would be infeasible and they are generally handled adequately by appropriate local or state response personnel. Therefore, the Agency has assigned RQ values of 10, 100, 1000 and 5000 pounds to both of the reactivity scales.

5. *Other Toxic Effects.* Data on other toxic effects have been used to adjust the statutory RQs for some of the hazardous substances, while for other hazardous substances, data on other toxic effects are still being evaluated by the Agency. RQ adjustments for the 221 hazardous substances which are still being analyzed for this criterion will be proposed, where appropriate, once the analysis is complete. Proposed RQs are not shown in Table 302.4 for these substances. The procedure for analyzing the other toxic effects of a substance is based upon the following data:

- The minimum effective dose (MED) levels for repeated exposures (mg/day for 70 kg man); and
- The type of effect (liver necrosis, birth defects, etc.) likely to be caused by repeated or continuous exposure.

Toxic effects, such as reproductive abnormalities, from single exposures will be considered in adjusting RQs when sufficient data are available.

The adjusted MED levels, the dose rating, range from 1 to 10, and are inversely proportional to the minimum effective dose (MED). Therefore, a substance which has an effect only when a very large dose is administered was assigned a rating of 1, and one

which has an effect after a very small dose is administered was assigned a rating of 10. A logarithmic transformation has been employed to adjust the MED levels (which actually cover six orders of magnitude) to a scale of 1 to 10.

The type of effect likely to be caused by repeated or continuous exposure to each hazardous substance was also scored on a scale ranging from 1 to 10. A score of 1 was assigned to such minor effects as enzyme induction or other biochemical change with no pathological change or organ weight change, while scores of 9 and 10 were assigned for pronounced pathological changes, organ dysfunction, neuropathy with loss of motor control, behavior control, or sensory ability, reproductive dysfunction, teratogenic effects, pronounced life-shortening, or death.

Each substance is assigned a final composite score based on the product of the adjusted MED (dose rating) and effects score. The composite score can thus range from 1 to 100, and RQs are assigned by equating the 5000-pound level to low composite scores, the 1-pound level to high composite scores, and the other RQ levels to the intermediate ranges of composite scores as shown in Exhibit 5. In this manner, a substance that has a minor effect and requires a high dose for such an effect will be assigned a high RQ, while a substance that may present more danger because of major effects manifested at low dose levels will be assigned a low RQ.

Some commenters claimed that it was inappropriate for the Agency to use toxicity data from repeated or continuous exposures in developing RQs for hazardous substances because most one-time spill situations and/or episodic releases do not result in repeated or continuous exposures. EPA decided to use this criterion because episodic releases which are not totally cleaned up may indeed cause repeated or continuous exposures to a toxic substance. For example, a spill of a hazardous substance may contaminate an aquifer which could lead to repeated exposure through drinking water. Moreover, CERCLA covers both episodic and continuous releases. Continuous releases, by their very nature, may lead to repeated or continuous exposure to toxic substances.

The procedure for other toxic effects has not been applied to all hazardous substances. EPA limited its analysis to substances that might exhibit other toxic effects and did not evaluate substances already at the proposed 1-pound RQ level, the lowest RQ level.

EXHIBIT 5.—CATEGORIES FOR REPORTABLE QUANTITY ADJUSTMENTS BASED ON OTHER TOXIC EFFECTS *

RQ (pounds)	Composite score
1	81-100
10	41-80
100	21-40
1,000	6-20
5,000	1-5

* For a detailed explanation on the derivation of these categories, see Background Document to Support the Notice of Proposed Rulemaking Pursuant to CERCLA Section 102(b).

6. *Carcinogenicity.* The Agency has identified carcinogenicity as one of the primary criteria to be used in setting RQs. The Agency is currently collecting and evaluating data on the carcinogenicity of the 192 CERCLA hazardous substances that have been identified as known or suspected human carcinogens using the International Agency for Research on Cancer (IARC) Monographs and the National Toxicology Program's Annual Report on Carcinogens (see the "Second Annual Report on Carcinogens," U.S. Department of Health and Human Services, December 1981). Of these 192 substances, 104 are also in the process of being analyzed for other toxic effects. EPA has developed a procedure for RQ adjustments for carcinogens. This assessment procedure utilizes a carcinogen hazard ranking based on a substance's strength as a carcinogen using potency factor estimates and the strength of evidence for carcinogenicity using the IARC criteria. It will be fine-tuned after the data collection and evaluation is completed and it will be discussed in detail in the forth coming proposal to adjust RQs for carcinogens. While a different approach will be used for carcinogenicity than for other toxic effects, it will be no less protective of public health and welfare and the environment.

7. *Combining the Primary Criteria.* Many substances may pose a threat to human health or welfare or the environment based upon several of the primary criteria listed above. If a substance poses a potential hazard based on more than one of the criteria, the "primary criteria" RQ selected is the lowest value identified for any of the applicable criteria. This procedure helps assure that the government will be notified of the most serious potential hazards to the public health or welfare or the environment. The use of the lowest value for the "primary criteria" RQ is appropriate because the RQ is merely the trigger for alerting the government to a release; the government

will not necessarily respond to all reported releases.

The methodology used to develop an RQ for the hazardous substance crotonaldehyde (CAS Nos. 4170-30-3 and 123-73-9) demonstrates how the primary criteria are combined. Under today's proposal, crotonaldehyde's aquatic toxicity correlates with a 100-pound RQ while its mammalian toxicity would suggest an RQ of 5000 pounds. Its ignitability correlates with a 1000-pound RQ. It is not sufficiently reactive to assign it an RQ on the basis of the reactivity criterion. It does not exhibit other toxic effects nor has it been identified by the sources discussed above as a known or suspected human carcinogen. Pursuant to the strategy discussed above, the "primary criteria" RQ of crotonaldehyde is 100 pounds.

Some commenters have suggested that RQs should be selected on the basis of the criterion associated with the medium into which releases of a particular substance most frequently occur. For example, it has been suggested that ammonia¹¹ is usually released into the air, yet it is very toxic in water. Setting the RQ for ammonia based on aquatic toxicity, then, may result in an RQ lower than necessary for most releases of ammonia. EPA is not selecting this approach because (1) data are not generally available to identify the most prevalent release medium for most CERCLA hazardous substances; (2) even where data are available, it is difficult to determine the prevalent medium of release for substances that are released into more than one medium; and (3) setting RQs on the basis of the most prevalent release medium may prevent the government from learning of releases into other media that pose greater hazards.

B. Secondary Criteria

Certain of the primary criteria RQs have been further adjusted using factors, referred to here as secondary criteria, that reflect natural dissipation processes which may reduce the risk posed by the release of a hazardous substance.

Three processes—biodegradability, hydrolysis, and photolysis—have been used as secondary criteria for adjusting the proposed RQs:

- Biodegradability is the degree to which a substance is capable of being degraded into less complex chemicals by biological means (e.g., enzyme-catalyzed degradation of chemicals by microorganisms in aquatic and soil environments);

- Hydrolysis is a chemical reaction resulting from the addition of water that

splits a bond between chemical units, and that introduces a hydroxyl group (—OH) into the chemical structure (i.e., $\text{RX} + \text{H}_2\text{O} \rightarrow \text{ROH} + \text{HX}$); and

- Photolysis is a process that occurs when a chemical absorbs light and then undergoes an energy transformation by any one of several mechanisms (e.g., dissociation, rearrangement, or oxidation).

If a hazardous substance is subject to transformation into a less hazardous form by one of these processes once it is released into the environment, the "primary criteria" RQ was raised one level (e.g., from 10 pounds to 100 pounds). A hazardous substance is considered to be subject to this transformation if either its biodegradation is demonstrated by standard biological oxygen demand tests or the substance is identified, in "Water Related Environmental Fate of 129 Priority Pollutants," EPA-440/4-79-029 a and b, as subject to hydrolysis or photolysis. If natural processes in the environment mitigate the effect of releases of certain hazardous substances, EPA believes that small releases of these substances would be less likely to merit notification to the NRC. The one-level increase in RQs reflects the Agency's judgment that the danger posed by the release of certain substances will be minimized due to these dissipation processes.

The application of the secondary criteria resulted in raising the RQs of 28 substances. The secondary criteria are not used in this proposal to raise RQs that are based on other toxic effects. The "primary criteria" RQ is the proposed RQ for these substances.

C. Results of the Proposed Methodology

Data were available to assign RQs on the basis of the primary criteria for most of the CERCLA hazardous substances. Six substances¹² on which little data were available on the primary criteria were assigned RQs based on the proposed RQs for hazardous substances similar in structure and substituents. The specific cases are detailed in the Background Document to Support the Notice of Proposed Rulemaking Pursuant to Section 102(b).

In addition, because releases of hazardous substances are often exposed to water, the RQs of a few substances were set based on the potential hazards posed by the products resulting from the substances' reaction with water. For

example, ammonium bifluoride dissolves in water to form hydrofluoric acid and, therefore, the proposed RQ for ammonium bifluoride is based on the application of the primary and secondary criteria to hydrofluoric acid. See the Background Document to Support the Notice of Proposed Rulemaking Pursuant to Section 102(b).

Table 302.4 lists all of the CERCLA hazardous substances, together with their statutory RQs and their proposed RQs where applicable. The first part lists the individual hazardous substances regulated under the statutes cited in CERCLA Section 101(14). The generic groups of chemicals designated under CWA Section 307(a), such as "SILVER AND COMPOUNDS," are printed in all capital letters and have no RQ assigned to them.¹³ These generic groups of chemicals could potentially encompass hundreds of specific compounds with varying toxicities. Consequently, it is not appropriate to establish one RQ for each generic group.

The second part contains the 89 hazardous waste streams designated under 40 CFR 261.31 and 261.32 (RCRA F and K lists). The Agency designated many of these waste streams as hazardous under RCRA because of the presence of specific hazardous constituents in the waste streams as set forth in Appendix VII of 40 CFR Part 261. The Agency is proposing RQs for these waste streams based on these hazardous constituents. The primary and secondary criteria, discussed above, were applied to each hazardous constituent in order to derive an RQ value. If a waste stream in 40 CFR 261.31 and 261.32 has more than one hazardous constituent, the RQ assigned the particular waste stream represents the lowest RQ associated with the hazardous constituents present in that waste stream. To illustrate this process, assume that a hypothetical waste stream has three hazardous constituents—X, Y, and Z—and that the RQs associated with these hazardous constituents are: X=10 pounds, Y=100 pounds, and Z=5000 pounds. The RQ for this hypothetical waste stream is, therefore, 10 pounds—the lowest RQ associated with any of its hazardous constituents.

EPA has proposed an RQ for each of the RCRA F001 through F005 waste streams. The Agency has also proposed individual adjusted RQs for many of the hazardous solvents listed under these

¹²The substances are:

1. Methane, dibromo- (methylene bromide)
2. Nitrophenols
3. Dinitrophenol
4. Hexachlorocyclohexane (all isomers)
5. Dichloropane
6. 4-Chlorophenyl phenyl ether

¹¹An adjusted RQ for ammonia is not proposed in this rulemaking because it is being examined for other toxic effects.

¹³The one exception to this approach is the RQ for PCBs. PCBs are assigned an RQ because they were previously designated under Section 311 of the CWA.

waste streams. Adjusted RQs are not proposed for certain solvents that are undergoing analysis for other toxic effects or carcinogenicity. The waste stream RQ is the lowest RQ assigned to any individual solvent listed under that waste stream. A releaser may use the RQ for the individual solvent, rather than the RQ for the waste stream, if he can establish the identity of the specific solvents which have been released. When the releaser is unsure of the identity of the solvents that have been released, the RQ for the waste stream must be used. For example, assume that a hypothetical waste stream, FOOX, has three solvents listed under it in Table 302.4, Solvent A, Solvent B, and Solvent C. The RQs associated with these solvents are: A=10 pounds, B=100 pounds, and C=1000 pounds. Therefore, the RQ for the waste stream FOOX is 10 pounds, the lowest RQ associated with any of the individual solvents identified under FOOX. This RQ must be used unless the releaser knows which specific solvents are being released.

D. Special Types of Substances

Several types of substances, notably unlisted ICRA wastes and radionuclides, pose special problems for RQ adjustment and require separate discussion.

1. *Unlisted RCRA Wastes (ICRE Wastes).* As noted previously, the CERCLA hazardous substances include hazardous wastes which exhibit the characteristics of ignitability, corrosivity, reactivity, and extraction procedure toxicity, but which are not specifically listed as hazardous wastes. These are commonly known as unlisted ICRA wastes (see 40 CFR 261.20 through 40 CFR 261.24). These wastes were all given a statutory RQ of one pound under CERCLA.

The Agency is proposing an RQ of 100 pounds for the unlisted hazardous wastes exhibiting the characteristics of ignitability, corrosivity, and reactivity (40 CFR 261.21, 261.22, and 261.23). Because the constituents of these unlisted wastes are generally unknown, it is impossible to apply the primary and secondary criteria to these wastes. The Agency has arrived at the 100-pound RQ by assuming that these wastes will, on the average, fall within the middle level of the five RQ levels, i.e., 100 pounds.

An alternative approach to setting RQs for unlisted ignitable, corrosive, and reactive wastes is to base the RQs on the RQs assigned to similar substances, namely listed hazardous wastes. The RQ proposed most often for hazardous wastes assigned on the basis of reactivity is 10 pounds while the RQ

proposed most often for hazardous wastes on the basis of ignitability is 1000 pounds. Under this alternative approach, unlisted wastes that are reactive would be assigned an adjusted RQ of 10 pounds, while ignitable unlisted wastes would have a 1000-pound RQ. Corrosivity is not a primary or secondary criterion, so this approach could not be used to set an RQ for unlisted corrosive wastes. Another problem with this approach is that EPA has not determined that listed and unlisted hazardous wastes pose similar potential hazards. The Agency, therefore, has selected the 100-pound RQ for unlisted ignitable, corrosive, and reactive wastes. Comments on the proposed RQ for unlisted ignitable, corrosive, and reactive wastes are requested.

Although the primary and secondary criteria cannot be applied to the unlisted wastes exhibiting ignitability, corrosivity, or reactivity, they can be applied to the wastes exhibiting extraction procedure (EP) toxicity. Because EP toxicity is defined in 40 CFR 261.24 as the presence of certain minimum concentrations of 14 specific materials (contaminants) in the extract from the waste after performing a defined extraction procedure, the primary and secondary criteria have been applied to each contaminant. Thus, there are separately listed RQs for each of the 14 different EP toxic wastes. For wastes containing one of the 14 contaminants, the corresponding proposed RQ is found in Table 302.4 under the entry "Unlisted Wastes, Characteristic of EP Toxicity," unless RQ adjustment is being deferred for the contaminant because an analysis of other toxic effects or carcinogenicity must still be performed (i.e., arsenic, cadmium, chromium (VI), lead, and selenium).

If more than one contaminant is found in an EP toxic hazardous waste, the EP toxicity RQ is based on the lowest RQ for any EP toxic contaminant present. If an unlisted hazardous waste exhibits the characteristics of EP toxicity, as well as one of the other characteristics, it will be assigned the lowest applicable RQ.

Comments on the proposed RQs for unlisted ICRA wastes are requested.

2. *Radionuclides.* Radionuclides are hazardous substances under CERCLA because they were designated as hazardous air pollutants pursuant to Section 112 of the Clean Air Act. Today's proposed rule does not adjust the RQ for radionuclides. The Agency will adjust the RQ for radionuclides in a future rulemaking; until that time, the statutory 1-pound RQ is applicable.

The Agency is considering several issues for future adjustments to radionuclide RQs. Two major related issues are:

- The units the Agency should use to measure RQs; and
- Whether one RQ should be set for all radionuclides or whether different RQs for specific radionuclides should be used.

EPA recognizes that the pound is not a suitable unit in which to measure the RQ for radionuclides, because releases much smaller than one pound can seriously threaten public health or welfare or the environment. EPA is currently considering two alternative types of measurement units for radionuclide RQs, dose-equivalents and activity levels. Dose-equivalents (usually measured in rems) are used for comparing biological effects of radiation on tissue. The activity level of a radionuclide release (measured in becquerels or curies), on the other hand, is the actual number of disintegrations of radionuclide atoms per unit time.

The category of radionuclides includes over a hundred specific substances. The Agency is considering whether to set one RQ for all radionuclides, or different RQs for specific radionuclides. A generic RQ for all radionuclides might be established in the form of a dose-equivalent. If the Agency list RQs for specific radionuclides, then the RQs will be listed in the form of activity levels. The potential effects of a radionuclide release and subsequent exposure depend not only on the number of disintegrations, but also on the kinds of radiation (alpha, beta, or gamma) and the energies of each, as well as the unique circumstances of the release. Thus, different hazards are posed by individual radionuclides depending upon the different types of radiation emitted, and different RQs in activity levels are appropriate if individual radionuclides are listed.

In order to select an approach, EPA is considering its prior experience as well as the experiences of other federal, state, and international agencies. For a discussion of radionuclides, see Background Document to Support the Notice of Proposed Rulemaking Pursuant to CERCLA Section 102(b), Supplementary Report: Radionuclides, available for inspection at Room S-398, U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460.

E. Additional Criteria Considered But Not Currently Used for Adjusting Reportable Quantities

As noted earlier, EPA has wide discretion in adjusting reportable quantities. The legislative history indicates that:

In determining reportable quantities under this paragraph (Section 3(a)(2) of S. 1480), the President may consider any factors deemed relevant to administering the reporting requirements or the President's other responsibilities under this Act. Administrative feasibility and practicality should be primary factors. In addition, the President may revise such regulations from time to time if under-reporting or over-reporting is occurring under existing regulations (Sen. Rep. 96-848, 96th Cong., 2d Sess. 29 (1980)).

EPA is considering using the criteria discussed below to adjust RQs, but has not incorporated these criteria into the RQ adjustments proposed today. This criteria include:

- Release History
- Release Potential
- Corrosivity

The Agency solicits comments on whether and how to use these or other feasibility or practicality criteria in implementing a simple notification system. In particular, the Agency solicits comment on the purely administrative criteria discussed under release history and release potential and on any additional administrative criteria which may be used to adjust RQs. More generally, EPA is interested in soliciting comments from persons who are familiar with characteristics of hazardous substances and common industry practices for handling these substances, in order to identify additional factors not currently used by EPA that might be appropriate for adjusting RQs. The Agency will consider such criteria in promulgating final RQ adjustments, if appropriate.

1. Release History. As the Agency gains experience in handling reports of releases of CERCLA hazardous substances, it may find that some substances are frequently released in situations that require an emergency response. Such release history might be used to adjust RQs. For example, if EPA has in the past responded to 100-pound releases of hazardous substances, an RQ of 100 pounds may be appropriate.

In an analysis of release history, EPA would evaluate past releases to determine how often a response was necessary, and, if so, what type of response was required. This analysis would include consideration of the medium into which the releases take place, the frequency with which releases

occur, the geographic location and circumstances of releases, the kind of equipment or techniques necessary to eliminate the hazard after releases have occurred, the cost of response, the type of terrain on which the releases of the substance occur, and estimates of the success of the responses. If analysis of these factors indicates that federal response has generally not occurred or is not necessary for reported releases of a particular substance, the RQ for that substance could be raised. The legislative history, which states that regulations may be revised if under-reporting or over-reporting occurs, encourages such an approach.

Although the National Response Center and EPA and Coast Guard districts have received hazardous substance spill notifications for several years, the data on release history are limited. The CWA Section 311 substances released into navigable waters and transportation-related releases provide a substantial history of release patterns, but not all the CERCLA hazardous substances have been subject to reporting requirements pursuant to CWA Section 311. Similarly, until passage of CERCLA, not all releases of CERCLA hazardous substances have been uniformly subject to DOT reporting requirements. Even in the absence of systematic and comprehensive records concerning release history, RQ adjustments might be based on the experience and judgment of On-Scene Coordinators familiar with the type of response appropriate for releases of hazardous substances.

2. Release Potential. Several factors may be used to predict the likelihood that hazardous substances will be released into the environment. These include: (a) distribution mode, (b) transportation mode, and (c) packaging and containerization. The Agency might raise the proposed RQs for substances that are less likely to be released and lower the RQs for substances that are more likely to be released.

(a) *Distribution mode.* Some hazardous substances are produced exclusively as intermediates for use in the same plant location which produces the intermediates. Other hazardous substances may be produced at locations that are fairly close to the plants at which they are consumed and converted into other substances. Where only a few plants produce the hazardous substance or where the consuming plants are either at the same site or nearby, the RQ suggested on the basis of the primary and secondary criteria may be relaxed because of the relatively small risk of release from the limited distribution of the hazardous substance.

(b) *Transportation mode.* The mode of transportation, e.g., rail, truck, or barge, may have an influence on the likelihood of a release. If some hazardous substances are generally shipped by a transportation mode that exposes them to a particularly high risk of large releases, the RQ may be reduced; hazardous substances which are primarily shipped by safer modes of transportation might have their RQs increased.

(c) *Packaging and containerization.* The method of packaging a hazardous substance could be used to modify its RQ. Substances that are usually packaged in a fashion that substantially reduces the likelihood of release (such as very high-priced substances) may be assigned RQs on the basis of the smallest package size. There is also likely to be some correlation between the size of a container normally used for shipping and the amount of a hazardous substance that is likely to be released because a release from only one container is more likely than a release from a number of containers simultaneously. RQs might therefore be set on the basis of container sizes for some substances.

It is not clear that adjustment of RQs on the basis of release potential would result in a significant reduction in reporting burden. If a substance is rarely released because of special handling, packaging, or distribution, then reporting costs may be insignificant regardless of whether the RQ is low or high. Therefore, raising the RQs of substances that have a low release potential may not affect the reporting burden. Moreover, regardless of how likely or unlikely a release is, notification may be necessary for releases that may pose a significant threat to the public health or welfare or the environment.

EPA solicits comments on the appropriateness of using feasibility or practicality criteria for adjusting RQs, in light of EPA's authority to consider any factors deemed relevant to administering the CERCLA reporting requirements.

3. Corrosivity. Corrosivity is one of the four criteria RCRA uses as a basis for regulating unlisted hazardous wastes (ignitability, corrosivity, reactivity, and EP toxicity) and therefore was considered for setting RQs under CERCLA. Corrosivity may be important in determining the potential hazard of a release because corrosive substances can cause injury and property damage.

Corrosivity has not been used as a criterion for assigning RQs under CERCLA because EPA has not developed or identified an appropriate

scale for rating corrosivity. The RCRA regulations define the characteristic of corrosivity in terms of pH ranges and rate of attack on steel (40 CFR 261.22; 45 FR 33122 (May 19, 1980) and 46 FR 35247 (July 7, 1981)). The pH ranges apply only to aqueous wastes and the rate of attack on steel test applies only to liquids. If EPA used a corrosivity scale based on these tests, corrosivity could not be used to adjust RQs when the hazardous substances were neither in aqueous solutions nor were liquids, despite the fact that such substances might pose potential hazards due to corrosivity. The Agency attempted to apply other tests and existing data in developing a corrosivity scale, but was unable to establish a five-level scale that addressed the corrosivity of all of the CERCLA hazardous substances. Accordingly, corrosivity was not used as a criterion in adjusting RQs.

F. Additional Criteria Considered, But Rejected

EPA considered, but rejected, using the additional criteria discussed below to adjust RQs. The Agency solicits comment on whether these criteria should be used to adjust RQs.

1. *Ease or Difficulty of Cleanup.* When a substance is easy to clean up, the releaser may be more willing to take cleanup action. Notification might therefore be unnecessary, since the government would not need to respond. If, however, a substance is particularly difficult to clean up or presents unique cleanup requirements, the releaser may be less likely to clean up even small releases of the substance unless required to do so and given assistance. One possible criterion for setting RQs, then, is to determine the ease or difficulty of cleanup and adjust RQs for certain substances so that easily-cleaned up substances receive higher RQs and substances with unique cleanup requirements receive lower RQs.

EPA has not included ease or difficulty of cleanup as a criterion because ease of cleanup does not guarantee that the releaser will actually take cleanup action nor do unique cleanup requirements necessarily mean that proper response will not be taken by the releaser. Thus, it has not been possible to correlate the ease or difficulty of cleanup with the government's need to know of a release in order to determine what response action to take, if any.

2. *Volatilization.* RQs could be adjusted based upon a substance's tendency to volatilize, the process by which a substance vaporizes into the air. Volatilization is a transport process

that could be used as a criterion for RQ adjustments along with biodegradability, hydrolysis, and photolysis.

EPA is not using this criterion in the RQ adjustment process because the hazard posed by a release of a hazardous substance does not necessarily decrease when the substance moves from soil or water into the air. Only the medium changes, not the hazardous characteristics of the substance.

V. Alternative Methodologies Considered

The Agency has considered several other methodologies for adjusting RQs but is not currently using them for the reasons given below. The Agency solicits comments on these methodologies, particularly any additional data that could facilitate a more complete evaluation of any of them.

A. Hazard Index

A hazard index (HI) can be used to assign to each hazardous substance a single number that represents the potential hazard of that substance when released to all media. Low RQs could be assigned to substances with high HI numbers, and high RQs to substances with low HI numbers. The HI number could be calculated by:

(1) Identifying the criteria that would be used to rate the potential hazards associated with each substance;

(2) Rating each substance on the basis of each criterion according to the potential hazard posed by the substance for that criterion; and

(3) Combining the ratings in an equation that reflects the weight to be given to each criterion.

The rating of the various criteria would be based on existing data and can take into consideration any or all of the primary and secondary criteria, as well as other criteria. The criteria can be grouped into five general categories, as outlined in Exhibit 6. The following are examples of different ways the ratings can be combined to form two unique hazard index equations:

$$HI = (\text{Health Effects}) \times (\text{Aggravating Characteristics}) + (\text{Welfare Effects}) \times (\text{Mitigating Transformation Characteristics})$$

or

$$HI = (\text{Health Effects}) + (\text{Welfare Effects}) + (\text{Aggravating Characteristics}) + (\text{Environmental Mobility})$$

Many other equations are possible. After the ratings are combined and a single numerical value obtained for each hazardous substance, reportable quantities would be assigned to groups

of chemicals with similar hazard index scores.

EXHIBIT 6—POSSIBLE CATEGORIES OF CRITERIA FOR DEVELOPING A HAZARD INDEX

Health effects

- Carcinogenicity
- Mutagenicity
- Teratogenicity
- Toxicity

Welfare Effects

- Ignitability
- Explosivity
- Corrosivity
- Reactivity
- Aquatic Toxicity

Aggravating Characteristics

- Persistence
- Bioaccumulation
- Toxic Combustion Products

Mitigating Transformation Characteristics

- Biodegradation
- Hydrolysis
- Photolysis
- Oxidation

Environmental Mobility

- Volatility
- Solubility

There are major differences between using a hazard index and using the methodology being proposed today. Under the proposed methodology, the primary criteria are evaluated independently and the proposed RQ is based on the primary criterion that yields the lowest RQ value identified for any of the applicable criteria. Under a hazard index, the same criteria could be independently evaluated, but the proposed RQ is based on all the criteria, not just the most sensitive one. The results of the two different approaches could be significantly different.

Under the proposed methodology, it is possible that the federal government may receive many reports that do not require a response, while under a hazard index, it is possible that the federal government will not receive reports concerning certain releases which might warrant a response. Notification is a trigger for determining whether a response may be necessary, and the legislative history, in discussing response authority, indicates that:

Because delay will often exacerbate an already serious situation, the bill (S. 1480) authorizes the President to respond when a substantial threat of release may exist. This standard is intended to be a flexible one and holds that it is preferable to err on the side of protecting public health, welfare, and the environment in administering the response authority of the Fund. (Sen. Rep. 96-848, 96th Cong., 2d Sess. 56 (1980)).

Advantages of the hazard index system are that the system can relate to

all media and that it can accommodate a wide variety of criteria which can provide a relative measure of a substance's potential harm or hazard.

EPA would face several problems in implementing a hazard index system. Under this strategy, each substance must be ranked for each criterion. Because the necessary data are not available for each substance with respect to each criterion, relative rankings would have to be based on default values used to replace necessary data. Conservative default values could be chosen, pending development of further data. Second, there is no general agreement as to how criteria are to be combined to form a scientifically-acceptable hazard index. Specific examples of different hazard index algorithms are included in the Background Document to Support the Notice of Proposed Rulemaking Pursuant to CERCLA Section 102(b). The report applied these algorithms to 27 sample substances and compared the results. Any number of plausible equations can be developed, yielding different hazard indices and different RQs for the substances examined. There is no single established method for determining how to weight different criteria, so an additional level of subjective judgment would be introduced into the RQ adjustment process.

B. Scenarios

Scenarios can be used to develop a model of the behavior of substances after they are released, based on specific sets of circumstances that describe the events likely to follow a release. For instance, data can be assembled to describe what would happen if a release to the soil led to contamination of underground sources of drinking water. On the basis of rough projections of potential harm under scenarios of differing probabilities, alternative RQs can be set.

This alternative was rejected because of its scientific complexity; scenarios which attempt to model the effects of hazardous substances in a comprehensive manner are by their nature highly complex, require extensive analysis, and can be subject to considerable controversy. Furthermore, developing RQs on a case-by-case basis using scenarios requires extensive data that are not generally available.

C. Fate and Effects Research

This strategy is based on the fate and effects of hazardous substances released into the environment. It involves obtaining a complete understanding of how each designated hazardous substance interacts with the

environment, what products may be formed under various circumstances surrounding a release, and how the designated hazardous substance and its environmental products each result in a specific hazard to public health or welfare or the environment. This differs from scenario development in that it is more comprehensive and specific; it does not focus only on those events which are likely to follow a release, but instead attempts to describe all potential effects of a release. The available data and scientific techniques will not support the broad and uniform application of such an approach at this time, making the utility of this approach very limited.

RQ Adjustments Under Section 311 of the Clean Water Act

EPA is also proposing in this rulemaking to revise certain of the reportable quantities established under Section 311(b)(4) of the Clean Water Act (40 CFR Part 117) for discharges of hazardous substances into navigable waters, so that the CWA Section 311 RQs will be identical to those proposed under CERCLA. While CERCLA requires reporting of releases of hazardous substances into the environment, CWA Section 311 covers a smaller list of hazardous substances and applies only to discharges into navigable waters. Section 311(b)(5) of the CWA requires any person in charge of a vessel or an onshore or offshore facility to notify the appropriate agency of the United States government as soon as he knows of any discharge of a hazardous substance from that vessel or facility that equals or exceeds the applicable RQ. The hazardous substances which must be reported under the CWA are all listed as hazardous substances under CERCLA, and reporting under CERCLA is required for every type of release of a hazardous substance that is subject to reporting requirements under CWA Section 311. Thus, notification will be simplified considerably by making the requirements under both statutes the same.

Reportable quantities which have been promulgated under CWA Section 311 differ from the adjusted RQs proposed under CERCLA for several reasons. First, the CERCLA RQ adjustment methodology adjusts RQs on the basis of other primary criteria in addition to aquatic toxicity, which was the basis for establishing reportable quantities under CWA Section 311. Second, the proposed CERCLA RQs use some updated data on aquatic toxicity. Third, the CERCLA methodology provides for RQs to be raised one level on the basis of secondary criteria, which

represent natural dissipation processes operating on substances released into the environment.

EPA believes that the CERCLA methodology meets the requirement of Section 311(b)(4) of the CWA, that:

The President shall by regulation determine for the purposes of this section those quantities of * * * any hazardous substances the discharge of which may be harmful to the public health or welfare of the United States, including but not limited to fish, shellfish, wildlife, and public and private property, shorelines, and beaches.

A single report to the National Response Center will satisfy the notification requirements of both statutes. If the CWA Section 311 RQs were not adjusted, certain releases would be subject to CERCLA and not CWA Section 311, and others subject to CWA Section 311 and not CERCLA. Notification requirements will be simpler for the regulated community to understand and for the federal government to administer when they are identical. Reportable quantities under both statutes are set forth in Table 302.4. 40 CFR Part 117 remains otherwise unchanged, because it contains provisions governing notification procedures, penalties, and jurisdiction. EPA solicits comments on the appropriateness of adjusting the CWA Section 311 RQs to be identical with the CERCLA RQs.

Summary of Supporting Analyses

I. Classification and Regulatory Impact Analysis

Rulemaking protocol under Executive Order 12291 requires that proposed regulations be classified as major or non-major for purposes of review by the Office of Management and Budget. According to the E.O. 12291, major rules are regulations that are likely to result in:

- (1) An annual effect on the economy of \$100 million or more; or
- (2) A major increase in costs or prices for consumers, individual industries, federal, state, or local government agencies, or geographic regions; or
- (3) Significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of the United States-based enterprises to compete with foreign-based enterprises in domestic or export markets.

The Regulatory Impact Analysis, available for inspection at Room S-398, U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460, shows that today's proposed regulation is non-major because it

results in a net cost savings of approximately \$19.3 million.¹⁴

II. Certification Why a Regulatory Flexibility Analysis Is Not Necessary

The Regulatory Flexibility Act of 1980 requires that a Regulatory Flexibility Analysis be performed for all rules that are likely to have "significant impact on a substantial number of small entities." EPA certifies that this regulation will not have a significant impact on a substantial number of small entities. See Chapter 7, Regulatory Impact Analysis.

III. Information Impact Analysis

EPA requires an Information Impact Analysis to be carried out for all rules that impose a paperwork burden on the public. This analysis estimates the burden imposed on parties outside EPA for activities such as recordkeeping or notification. It is anticipated that RQ adjustments will change the paperwork burden imposed on the regulated community for information collection associated with reporting releases. As estimated in the Regulatory Impact Analysis, the paperwork burden of notification and recordkeeping on private parties will be reduced by 57,000 hours by the rule proposed today.

In accordance with the Paperwork Reduction Act of 1980, 44 U.S.C. Section 3501 *et seq.*, the reporting or recordkeeping provisions that are included in this proposed rule have been submitted for approval to the Office of Management and Budget (OMB) under Section 3504(h) of the Paperwork Reduction Act. Any final rule will include an explanation of how the reporting or recordkeeping provisions contained therein respond to any comments by OMB and the public.

List of Subjects in 40 CFR Part 302

Administrative practice and procedure, Air pollution control, Chemicals, Hazardous materials, Hazardous materials transportation, Hazardous substances, Hazardous wastes, Intergovernmental relations, Liabilities, Natural resources, Nuclear materials, Penalties, Pesticides and pests, Radioactive materials, Reporting and recordkeeping requirements, Superfund, Waste treatment and disposal, Water pollution control, Water supply.

1. It is proposed to amend 40 CFR by adding Part 302 as follows:

PART 302—DESIGNATION, REPORTABLE QUANTITIES, AND NOTIFICATION

Sec.

- 302.1 Applicability.
- 302.2 Abbreviations.
- 302.3 Definitions.
- 302.4 Designation of hazardous substances.
- 302.5 Determination of reportable quantities.
- 302.6 Notification requirements.
- 302.7 Penalties.

Authority: Sections 101 and 102 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601 *et seq.*); Sections 311 and 501(a) of the Federal Water Pollution Control Act (33 U.S.C. 1251 *et seq.*).

§ 302.1 Applicability.

This regulation lists those substances designated as hazardous substances under Section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("the Act"), identifies reportable quantities for these substances, and sets forth the notification requirements for releases of these substances. This regulation also sets forth reportable quantities for hazardous substances designated under Section 311(b)(2)(A) of the Clean Water Act.

§ 302.2 Abbreviations.

CAS Registry No.=Chemical Abstracts Service Registry Number.
RCRA=Resource Conservation and Recovery Act of 1976, as amended.
lb=pound.
Kg=kilogram.
RQ=reportable quantity.

§ 302.3 Definitions.

As used in this part, all terms shall have the meaning set forth below:

(a) "The Act", "CERCLA", or "Superfund" means the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (Pub. L. 96-510);

(b) "Administrator" means the Administrator of the United States Environmental Protection Agency ("EPA");

(c) "Consumer product" shall have the meaning stated in 15 U.S.C. 2052;

(d) "Environment" means (1) the navigable waters, the waters of the contiguous zone, and the ocean waters of which the natural resources are under the exclusive management authority of the United States under the Fishery Conservation and Management Act of 1976, and (2) any other surface water, ground water, drinking water supply, land surface or subsurface strata, or ambient air within the United States or

under the jurisdiction of the United States;

(e) "Facility" means (1) any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or publicly owned treatment works), well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, or aircraft, or (2) any site or area where a hazardous substance has been deposited, stored, disposed of, or placed, or otherwise come to be located; but does not include any consumer product in consumer use or any vessel;

(f) "Federally permitted release" means (1) discharges in compliance with a permit under section 402 of the Federal Water Pollution Control Act, (2) discharges resulting from circumstances identified and reviewed and made part of the public record with respect to a permit issued or modified under section 402 of the Federal Water Pollution Control Act and subject to a condition of such permit, (3) continuous or anticipated intermittent discharges from a point source, identified in a permit or permit application under section 402 of the Federal Water Pollution Control Act, which are caused by events occurring within the scope of relevant operating or treatment systems, (4) discharges in compliance with a legally enforceable permit under section 404 of the Federal Water Pollution Control Act, (5) releases in compliance with a legally enforceable final permit issued pursuant to section 3005(a) through (d) of the Solid Waste Disposal Act from a hazardous waste treatment, storage, or disposal facility when such permit specifically identifies the hazardous substances and makes such substances subject to a standard of practice, control procedure or bioassay limitation or condition, or other control on the hazardous substances in such releases, (6) any release in compliance with a legally enforceable permit issued under section 102 or section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972, (7) any injection of fluids authorized under Federal underground injection control programs or state programs submitted for Federal approval (and not disapproved by the Administrator of the Environmental Protection Agency) pursuant to part C of the Safe Drinking Water Act, (8) any emission into the air subject to a permit or control regulation under section 111, section 112, title I part C, title I part D, or State implementation plans submitted in accordance with section 110 of the Clean Air Act (and not disapproved by the Administrator of the Environmental Protection Agency), including any schedule or waiver

¹⁴ This figure does not include the costs or benefits associated with continuous releases.

granted, promulgated, or approved under these sections, (9) any injection of fluids or other materials authorized under applicable State law (i) for the purpose of stimulating or treating wells for the production of crude oil, natural gas, or water, (ii) for the purpose of secondary, tertiary, or other enhanced recovery of crude oil or natural gas, or (iii) which are brought to the surface in conjunction with the production of crude oil or natural gas and which are reinjected, (10) the introduction of any pollutant into a publicly owned treatment works when such pollutant is specified in and in compliance with applicable pretreatment standards of section 307(b) or (c) of the Clean Water Act and enforceable requirements in a pretreatment program submitted by a State or municipality for Federal approval under section 402 of such Act, and (11) any release of source, special nuclear, or byproduct material, as those terms are defined in the Atomic Energy Act of 1954, in compliance with a legally enforceable license, permit, regulation, or order issued pursuant to the Atomic Energy Act of 1954;

(g) "Hazardous substance" means any substance designated pursuant to 40 CFR Part 302;

(h) "Hazardous waste" shall have the meaning provided in section 1004 of the Solid Waste Disposal Act;

(i) "Navigable waters" or "navigable waters of the United States" means waters of the United States, including the territorial seas;

(j) "Normal application of pesticides" means application pursuant to the label directions for application of a pesticide product registered under section 3 or section 24 of the Federal Insecticide, Fungicide, and Rodenticide Act as amended (7 U.S.C. 136 *et seq.*) (FIFRA),

or pursuant to the terms and conditions of an experimental use permit issued under section 5 of FIFRA, or pursuant to an exemption granted under section 18 of FIFRA;

(k) "Offshore facility" means any facility of any kind located in, on, or under, any of the navigable waters of the United States, and any facility of any kind which is subject to the jurisdiction of the United States and is located in, on, or under any other waters, other than a vessel or a public vessel;

(l) "Onshore facility" means any facility (including, but not limited to, motor vehicles and rolling stock) of any kind located in, on, or under, any land or non-navigable waters within the United States;

(m) "Person" means an individual, firm, corporation, association, partnership, consortium, joint venture, commercial entity, United States Government, State, municipality, commission, political subdivision of a State, or any interstate body;

(n) "Release" means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment, but excludes (1) any release which results in exposure to persons solely within a workplace, with respect to a claim which such persons may assert against the employer of such persons, (2) emissions from the engine exhaust of a motor vehicle, rolling stock, aircraft, vessel, or pipeline pumping station engine, (3) release of source, byproduct, or special nuclear material from a nuclear incident, as those terms are defined in the Atomic Energy Act of 1954, if such release is subject to requirements with respect to financial

protection established by the Nuclear Regulatory Commission under section 170 of such Act, or, for the purposes of section 104 of CERCLA or any other response action, any release of source byproduct, or special nuclear material from any processing site designated under section 102(a)(1) or 302(a) of the Uranium Mill Tailings Radiation Control Act of 1978, and (4) the normal application of fertilizer;

(o) "Reportable quantity" means that quantity, as set forth in this part, the release of which requires notification pursuant to this part;

(p) "United States" include the several States of the United States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, American Samoa, the United States Virgin Islands, the Commonwealth of the Northern Marianas, and any other territory or possession over which the United States has jurisdiction; and

(q) "Vessel" means every description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on water.

§ 302.4 Designation of hazardous Substances.

(a) *Listed Hazardous Substances.* The elements and compounds and hazardous wastes appearing in Table 302.4 are designated as hazardous substances under Section 101(14) of the Act.

(b) *Unlisted Hazardous Substances.* A solid waste, as defined in 40 CFR 261.2, which is not excluded from regulation as a hazardous waste under 40 CFR 261.4(b), is a hazardous substance under Section 101(14) of the Act if it exhibits any of the characteristics identified in 40 CFR 261.20 through 261.24.

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES

Hazardous Substance	CAS No.	Regulatory Synonyms	Statutory			Proposed RQ	
			RQ	Code ††	RCRA Waste Number	Category	Pounds(Kg)
Acenaphthene.....	83329		1*	2			#
Acenaphthylene.....	208968		1*	2			#
Acetaldehyde.....	75070	Ethanal.....	1000	1,4	U001	C	1000(454)
Acetaldehyde, chloro.....	107200	Chloroacetaldehyde.....	1*	4	P023	C	1000(454)
Acetaldehyde, trichloro.....	75876	Chloral.....	1*	4	U034		#
Acetamide, N-(aminothioxomethyl).....	591082	1-Acetyl-2-thiourea.....	1*	4	P002	C	1000(454)
Acetamide, N-(4-ethoxyphenyl).....	62442	Phenacetin.....	1*	4	U187		#
Acetamide, N-9H-fluoren-2-yl.....	53963	2-Acetylaminofluorene.....	1*	4	U005		#
Acetamide, 2-fluoro.....	640197	Fluoroacetamide.....	1*	4	P057	B	100(45 4)
Acetic acid.....	64197		1000	1		D	5000(2270)

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CAS No.	Regulatory Synonyms	Statutory			Proposed RQ	
			RQ	Code ††	RCRA Waste Number	Category	Pounds(Kg)
Acetic acid, ethyl ester.....	141786	Ethyl acetate.....	1*	4	U112	D	5000(2270)
Acetic acid, fluoro-, sodium salt.....	62748	Fluoroacetic acid, sodium salt.....	1*	4	P058	A	10(4.54)
Acetic acid, lead salt.....	331042	Lead acetate.....	5000	1,4	U144		###
Acetic acid, thallium(I) salt.....	563688	Thallium(I) acetate.....	1*	4	U214		##
Acetic anhydride.....	108247		1000	1		D	5000(2270)
Acetimidic acid, N-[(methylcarbamoyl)oxy]thio-, methyl ester.....	16752775	Methomyl.....	1*	4	P066	C	1000(454)
Acetone.....	37641	2-Propanone.....	1*	4	U002	D	5000(2270)
Acetone cyanohydrin.....	75865	2-Methylactonitrile..... Propenenitrile, 2-hydroxy-2-methyl-	10	1,4	P069	A	10(4.54)
Acetonitrile.....	75058	Ethanenitrile.....	1*	4	U003	C	1000(454)
3-(alpha-Acetoxybenzyl)-4-hydroxycoumarin and salts.....	31812	Warfarin.....	1*	4	P001	B	100(45.4)
Acetophenone.....	38862	Ethanone, 1-phenyl.....	1*	4	U004	D	5000(2270)
2-Acetylaminofluorene.....	33963	Acetamide, N-9H-fluoren-2-yl.....	1*	4	U005		#
Acetyl bromide.....	506967		5000	1		D	5000(2270)
Acetyl chloride.....	75365	Ethanoyl chloride.....	5000	1,4	U006	D	5000(2270)
1-Acetyl-2-thiourea.....	531082	Acetamide, N-(aminothioxomethyl).....	1*	4	P002	C	1000(454)
Acrolein.....	107028	2-Propenal.....	1	1,2,4	P003	X	1(0.454)
Acrylamide.....	79061	2-Propenamide.....	1*	4	U007	D	5000(2270)
Acrylic acid.....	79107	2-Propenoic acid.....	1*	4	U008	D	5000(2270)
Acrylonitrile.....	107131	2-Propenenitrile.....	100	1,2,4	U009		###
Adipic acid.....	124049		5000	1		D	5000(2270)
Alanine, 3-[p-bis(2-chloroethyl)amino]phenyl-, L-.....	148823	Melphalan.....	1*	4	U150		#
Aldicarb.....	166083	Propanal, 2-methyl-2-(methylthio)-, O-[(methylamino) carbonyl]oxime.....	1*	4	P070	A	10(4.54)
Aldrin.....	309002	1,2,3,4,10-10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4,5,8-endo,exo-dimethanonaphthalene.....	1	1,2,4	P004	X	1(0.454)
Allyl alcohol.....	107186	2-Propen-1-ol.....	100	1,4	P005	B	100(45.4)
Allyl chloride.....	107051		1000	1		D	5000(2270)
Aluminum phosphide.....	20859738		1*	4	P006	B	100(45.4)
Aluminum sulfate.....	10043013		5000	1		D	5000(2270)
5-(Aminomethyl)-3-isoxazolol.....	2763964	3(2H)-Isoxazolone, 5-(aminomethyl).....	1*	4	P007	C	1000(454)
4-Aminopyridine.....	504245	4-Pyridinamine.....	1*	4	P008	C	1000(454)
Amitrole.....	61825	1H-1,2,4-Triazol-3-amine.....	1*	4	U011		#
Ammonia.....	7664417		100	1			##
Ammonium acetate.....	631618		5000	1		D	5000(2270)
Ammonium benzoate.....	1863634		5000	1		D	5000(2270)
Ammonium bicarbonate.....	1066337		5000	1		D	5000(2270)
Ammonium bichromate.....	7769095		1000	1			###
Ammonium bifluoride.....	1341497		5000	1			##
Ammonium bisulfite.....	10182300		5000	1		D	5000(2270)
Ammonium carbamate.....	1111780		5000	1		D	5000(2270)
Ammonium carbonate.....	506876		5000	1		D	5000(2270)
Ammonium chloride.....	12125029		5000	1		D	5000(2270)
Ammonium chromate.....	7789989		1000	1			#
Ammonium citrate, dibasic.....	3012655		5000	1		D	5000(2270)

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CAS No.	Regulatory Synonyms	Statutory			Proposed RQ	
			RQ	Code ††	RCRA Waste Number	Category	Pounds(Kg)
Ammonium fluoroborate.....	13826830		5000	1		D	5000(2270)
Ammonium fluoride.....	12125018		5000	1		B	100(45.4)
Ammonium hydroxide.....	1336216		1000	1		C	1000(454)
Ammonium oxalate.....	8009707 5972736 14258492		5000	1		D	5000(2270)
Ammonium picrate.....	131748	Phenol, 2,4,6-trinitro-, ammonium salt.....	1*	4	P009	A	10(4.54)
Ammonium silicofluoride.....	16919190		1000	1		C	1000(454)
Ammonium sulfamate.....	7773060		5000	1		D	5000(2270)
Ammonium sulfide.....	12135761		5000	1		B	100(45.4)
Ammonium sulfite.....	10196040		5000	1*		D	5000(2270)
Ammonium tartrate.....	14307438 3164292		5000	1		D	5000(2270)
Ammonium thiocyanate.....	1762954		5000	1		D	5000(2270)
Ammonium thiosulfate.....	7783188		5000	1		D	5000(2270)
Ammonium vanadate.....	7803556	Vanadic acid, ammonium salt.....	1*	4	P119	C	1000(454)
Amyl acetate.....	628637 123922 626380 625181		1000	1		D	5000(2270)
Aniline.....	62533	Benzenamine.....	1000	1,4	U012	D	5000(2270)
Anthracene.....	120127		1*	2			#
Antimony †.....	7440360		1*	2			##
ANTIMONY AND COMPOUNDS.....			1*	2			**
Antimony pentachloride.....	7647189		1000	1		C	1000(454)
Antimony potassium tartrate.....	28300745		1000	1		B	100(45.4)
Antimony tribromide.....	7789619		1000	1		C	1000(454)
Antimony trichloride.....	10025919		1000	1		C	1000(454)
Antimony trifluoride.....	7783564		1000	1		C	1000(454)
Antimony trioxide.....	1309644		5000	1		C	1000(454)
Aroclor 1016.....	12674112		1*	2		X	1(0.454)
Aroclor 1221.....	11104282		1*	2		X	1(0.454)
Aroclor 1232.....	11141165		1*	2		X	1(0.454)
Aroclor 1242.....	53469219		1*	2		X	1(0.454)
Aroclor 1248.....	12672296		1*	2		X	1(0.454)
Aroclor 1254.....	11097691		1*	2		X	1(0.454)
Aroclor 1260.....	11096825		1*	2		X	1(0.454)
Arsenic †.....	7440382		1*	2,3			###
Arsenic acid.....	1327522 7778394		1*	4	P010		###
ARSENIC AND COMPOUNDS.....			1*	2			**
Arsenic disulfide.....	1303328		5000	1			###
Arsenic(III) oxide.....	1327533	Arsenic trioxide.....	5000	1,4	P012		###
Arsenic(V) oxide.....	1303282	Arsenic pentoxide.....	5000	1,4	P011		###
Arsenic pentoxide.....	1303282	Arsenic(V) oxide.....	5000	1,4	P011		###
Arsenic trichloride.....	7784841		5000	1			###
Arsenic trioxide.....	1327533	Arsenic(III) oxide.....	5000	1,4	P012		###

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CAS No.	Regulatory Synonyms	Statutory			Proposed RQ	
			RQ	Code ††	RCRA Waste Number	Category	Pounds(Kg)
Arsenic trisulfide.....	1303339		5000	1			###
Arsine, diethyl.....	692422	Diethylarsine.....	1*	4	P038		###
Asbestos.....	1332214		1*	2,3			###
Auramine.....	492808	Benzenamine, 4,4'-carbonimidoylbis(N,N-dimethyl-.....	1*	4	U014		#
Azaserine.....	115026	L-Serine, diazoacetate (ester).....	1*	4	U015		#
Aziridine.....	151564	Ethylenimine.....	1*	4	P054		#
Azirino(2',3':3,4)pyrrolo(1,2-a)indole-4,7-dione,6-amino-8- [[(aminocarbonyloxy)methyl]-1,1a,2,8,8a,8b- hexahydro-8a-methoxy-5-methyl-.....	50077	Mitomycin C.....	1*	4	U010		#
Barium cyanide.....	542621		10	1,4	P013	A	10(4.54)
Benz[<i>j</i>]aceanthrylene, 1,2-dihydro-3-methyl.....	56495	3-Methylcholanthrene.....	1*	4	U157		#
Benz[<i>c</i>]acridine.....	225514	3,4-Benzacridine.....	1*	4	U016		#
3,4-Benzacridine.....	225514	Benz[<i>c</i>]acridine.....	1*	4	U016		#
Benzal chloride.....	98873	Benzene, dichloromethyl.....	1*	4	U017	D	5000(2270)
Benz[<i>a</i>]anthracene.....	56553	1,2-Benzanthracene..... Benzo[<i>a</i>]anthracene	1*	2,4	U018		###
1,2-Benzanthracene.....	56553	Benz[<i>a</i>]anthracene..... Benzo[<i>a</i>]anthracene	1*	2,4	U018		###
1,2-Benzanthracene, 7,12-dimethyl.....	57976	7,12-Dimethylbenz[<i>a</i>]anthracene.....	1*	4	U094		#
Benzenamine.....	62533	Aniline.....	1000	1,4	U012	D	5000(2270)
Benzenamine, 4,4'-carbonimidoylbis(N,N-dimethyl-.....	492808	Auramine.....	1*	4	U014		#
Benzenamine, 4-chloro.....	106478	p-Chloroaniline.....	1*	4	P024	C	1000(454)
Benzenamine, 4-chloro-2-methyl-,hydrochloride.....	165933	4-Chloro-o-toluidine, hydrochloride.....	1*	4	U049		#
Benzenamine, N,N-dimethyl-4-phenylazo.....	60117	Dimethylaminoazobenzene.....	1*	4	U093		#
Benzenamine, 4,4'-methylenabis(2-chloro-.....	101144	4,4'-Methylenabis(2-chloroaniline).....	1*	4	U158		#
Benzenamine, 2-methyl-, hydrochloride.....	636215	o-Toluidine hydrochloride.....	1*	4	U222		#
Benzenamine, 2-methyl-5-nitro.....	99556	5-Nitro-o-toluidine.....	1*	4	U181		#
Benzenamine, 4-nitro.....	100018	p-Nitroaniline.....	1*	4	P077	D	5000(2270)
Benzene.....	71432		1000	1,2,3,4	U019		###
Benzene, 1-bromo-4-phenoxy.....	101553	4-Bromophenyl phenyl ether.....	1*	2,4	U030	A	10(4.54)
Benzene, chloro.....	108907	Chlorobenzene.....	100	1,2,4	U037	B	100(45.4)
Benzene, chloromethyl.....	100447	Benzyl chloride.....	100	1,4	P028		#
Benzene, 1,2-dichloro.....	95501	1,2-Dichlorobenzene..... o-Dichlorobenzene	1*	2,4	U070	B	100(45.4)
Benzene, 1,3-dichloro.....	541731	1,3-Dichlorobenzene..... m-Dichlorobenzene	1*	2,4	U071	B	100(45.4)
Benzene, 1,4-dichloro.....	106467	1,4-Dichlorobenzene..... p-Dichlorobenzene	1*	2,4	U072	B	100(45.4)
Benzene, dichloromethyl.....	98873	Benzal chloride.....	1*	4	U017	D	5000(2270)
Benzene, 2,4-diisocyanatomethyl.....	584849	Toluene diisocyanate.....	1*	4	U223	B	100(45.4)
Benzene, dimethyl..... m- o- p-	1330207 108383 95476 106423	Xylene..... m- o- p-	1000	1,4	U239	C	1000(454)
Benzene, hexachloro.....	118741	Hexachlorobenzene.....	1*	2,4	U127		###
Benzene, hexahydro.....	110827	Cyclohexane.....	1000	1,4	U056	C	1000(454)
Benzene, hydroxy.....	108952	Phenol.....	1000	1,2,4	U188		##
Benzene, methyl.....	108883	Toluene.....	1000	1,2,4	U220	C	1000(454)
Benzene, 1-methyl-2,4-dinitro.....	121142	2,4-Dinitrotoluene.....	1*	2,4	U105	B	100(45.4)

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CAS No.	Regulatory Synonyms	Statutory			Proposed RQ	
			RQ	Code ††	RCRA Waste Number	Category	Pounds(Kg)
Benzene, 1-methyl-2,6-dinitro.....	606202	2,6-Dinitrotoluene.....	1*	2,4	U106	B	100(45.4)
Benzene, 1,2-methylenedioxy-4-allyl.....	94597	Safrole.....	1*	4	U203		#
Benzene, 1,2-methylenedioxy-4-propenyl.....	120581	Isosafrole.....	1*	4	U141		#
Benzene, 1,2-methylenedioxy-4-propyl.....	94586	Dihydrosafrole.....	1*	4	U090		#
Benzene, 1-methylethyl.....	98828	Cumene.....	1*	4	U055	D	5000(2270)
Benzene, nitro.....	98953	Nitrobenzene.....	1000	1,2,4	U169	C	1000(454)
Benzene, pentachloro.....	608935	Pentachlorobenzene.....	1*	4	U183		##
Benzene, pentachloronitro.....	82688	Pentachloronitrobenzene.....	1*	4	U185		###
Benzene, 1,2,4,5-tetrachloro.....	95943	1,2,4,5-Tetrachlorobenzene.....	1*	4	U207	D	5000(2270)
Benzene, trichloromethyl.....	98077	Benzotrichloride.....	1*	4	U023	C	1000(454)
Benzene, 1,3,5-trinitro.....	99354	sym-Trinitrobenzene.....	1*	4	U234		##
Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)- alpha-hydroxy-ethyl ester.....	510156	Ethyl 4,4'-dichlorobenzilate.....	1*	4	U038		#
1,2-Benzenedicarboxylic acid anhydride.....	85449	Phthalic anhydride.....	1*	4	U190	D	5000(2270)
1,2-Benzenedicarboxylic acid, [bis(2-ethylhexyl)] ester.....	117817	Bis(2-ethylhexyl)phthalate.....	1*	2,4	U028	D	5000(2270)
1,2-Benzenedicarboxylic acid, dibutyl ester.....	84742	n-Butyl phthalate..... Dibutyl phthalate..... Di-n-butyl phthalate.....	100	1,2,4	U069	B	100(45.4)
1,2-Benzenedicarboxylic acid, diethyl ester.....	84662	Diethyl phthalate.....	1*	2,4	U088	B	100(45.4)
1,2-Benzenedicarboxylic acid, dimethyl ester.....	131113	Dimethyl phthalate.....	1*	2,4	U102	D	5000(2270)
1,2-Benzenedicarboxylic acid, di-n-octyl ester.....	117840	Di-n-octyl phthalate.....	1*	2,4	U107	D	5000(2270)
1,3-Benzenediol.....	108463	Resorcinol.....	1000	1,4	U201	D	5000(2270)
1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl].....	51434	Epinephrine.....	1*	4	P042	C	1000(454)
Benzenesulfonic acid chloride.....	98099	Benzenesulfonyl chloride.....	1*	4	U020	B	100(45.4)
Benzenesulfonyl chloride.....	98099	Benzenesulfonic acid chloride.....	1*	4	U020	B	100(45.4)
Benzenethiol.....	108985	Thiophenol.....	1*	4	P014	B	100(45.4)
Benzidine.....	92875	(1,1'-Biphenyl)-4,4'-diamine.....	1*	2,4	U021		###
1,2-Benzisothiazolin-3-one, 1,1-dioxide, and salts.....	81072	Saccharin and salts.....	1*	4	U202		#
Benzo[a]anthracene.....	56553	Benz[a]anthracene..... 1,2-Benzanthracene.....	1*	2,4	U018		###
Benzo[b]fluoranthene.....	205992		1*	2			###
Benzo[k]fluoranthene.....	207089		1*	2			#
Benzo[j,k]fluorene.....	206440	Fluoranthene.....	1*	2,4	U120		#
Benzoic acid.....	65850		5000	1		D	5000(2270)
Benzonitrile.....	100470		1000	1		D	5000(2270)
Benzo[ghi]perylene.....	191242		1*	2			#
Benzo[a]pyrene.....	50328	3,4-Benzopyrene.....	1*	2,4	U022		###
3,4-Benzopyrene.....	50328	Benzo[a]pyrene.....	1*	2,4	U022		###
p-Benzoquinone.....	106514	1,4-Cyclohexadienedione.....	1*	4	U197		##
Benzotrichloride.....	98077	Benzene, trichloromethyl.....	1*	4	U023	C	1000(454)
Benzoyl chloride.....	98884		1000	1		C	1000(454)
1,2-Benzphenanthrene.....	218019	Chrysene.....	1*	2,4	U050		###
Benzyl chloride.....	100447	Benzene, chloromethyl.....	100	1,4	P028		#
Beryllium †.....	7440417	Beryllium dust.....	1*	2,3,4	P015		###
BERYLLIUM AND COMPOUNDS.....			1*	2			**
Beryllium chloride.....	7787475		5000	1			###

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CAS No.	Regulatory Synonyms	Statutory			Proposed RQ	
			RQ	Code ††	RCRA Waste Number	Category	Pounds(Kg)
Beryllium dust.....	7440417	Beryllium.....	1*	2,3,4	P015		###
Beryllium fluoride.....	7787497		5000	1			###
Beryllium nitrate.....	13597994 7787555		5000	1			###
alpha - BHC.....	319846		1*	2		X	1(0.454)
beta - BHC.....	313857		1*	2		X	1(0.454)
gamma - BHC.....	53899	Hexachlorocyclohexane (gamma isomer)..... Lindane	1	1,2,4	U129	X	1(0.454)
delta - BHC.....	313868		1*	2		X	1(0.454)
2,2'-Bioxirane.....	1461535	1,2,3,4-Diepoxybutane.....	1*	4	U085		#
(1,1'-Biphenyl)-4,4'-diamine.....	93875	Benzidine.....	1*	2,4	U021		###
(1,1'-Biphenyl)-4,4'-diamine,3,3'-dichloro-.....	91941	3,3'-Dichlorobenzidine.....	1*	2,4	U073		###
(1,1'-Biphenyl)-4,4'-diamine,3,3'-dimethoxy-.....	113904	3,3'-Dimethoxybenzidine.....	1*	4	U091		#
(1,1'-Biphenyl)-4,4'-diamine,3,3'-dimethyl-.....	113937	3,3'-Dimethylbenzidine.....	1*	4	U095		#
Bis(2-chloroethoxy) methane.....	111911	Ethane, 1,1'-[methylenebis(oxy)]bis[2-chloro-.....	1*	2,4	U024	C	1000(454)
Bis (2-chloroethyl) ether.....	111444	Dichloroethyl ether..... Ethane, 1,1'-oxybis[2-chloro-.....	1*	2,4	U025		#
Bis(2-chloroisopropyl) ether.....	103601	Propane, 2,2'-oxybis[2-chloro-.....	1*	2,4	U027	C	1000(454)
Bis(chloromethyl) ether.....	542881	Methane, oxybis(chloro-.....	1*	4	P016		###
Bis(dimethylthiocarbamoyl) disulfide.....	137268	Thiram.....	1*	4	U244	A	10(4.54)
Bis(2-ethylhexyl)phthalate.....	117817	1,2-Benzenedicarboxylic acid,[bis(2-ethylhexyl)] ester.....	1*	2,4	U028	D	5000(2270)
Bromine cyanide.....	506883	Cyanogen bromide.....	1*	4	U246	C	1000(454)
Bromoacetone.....	593312	2-Propanone, 1-bromo-.....	1*	4	P017	C	1000(454)
Bromoform.....	73252	Methane, tribromo.....	1*	2,4	U225	B	100(45.4)
4-Bromophenyl phenyl ether.....	101553	Benzene, 1-bromo-4-phenoxy.....	1*	2,4	U030	A	10(4.54)
Brucine.....	357573	Strychnidin-10-one, 2,3-dimethoxy.....	1*	4	P018	A	10(4.54)
1,3-Butadiene, 1,1,2,3,4,4-hexachloro-.....	87683	Hexachlorobutadiene.....	1*	2,4	U128		###
1-Butanamine, N-butyl-N-nitroso-.....	921163	N-Nitrosodi-n-butylamine.....	1*	4	U172		#
Butanoic acid, 4-[bis(2-chloroethyl)amino]benzene-.....	305033	Chlorambucil.....	1*	4	U035		#
1-Butanol.....	71363	n-Butyl alcohol.....	1*	4	U031	D	5000(2270)
2-Butanone.....	78933	Methyl ethyl ketone.....	1*	4	U159	C	1000(454)
2-Butanone peroxide.....	1333234	Methyl ethyl ketone peroxide.....	1*	4	U160	A	10(4.54)
2-Butenal.....	123739 4170303	Crotonaldehyde.....	100	1,4	U053	B	100(45.4)
2-Butene, 1,4-dichloro-.....	764410	1,4-Dichloro-2-butene.....	1*	4	U074	X	1(0.454)
Butyl acetate.....	123864 110190 105464 540885		5000	1		D	5000(2270)
n-Butyl alcohol.....	71363	1-Butanol.....	1*	4	U031	D	5000(2270)
Butylamine.....	109739 78819 513495 13952846 75649		1000	1		D	5000(2270)
Butyl benzyl phthalate.....	85687		1*	2		D	5000(2270)
n-Butyl phthalate.....	84742	1,2-Benzenedicarboxylic acid,dibutyl ester..... Dibutyl phthalate Di-n-butyl phthalate	100	1,2,4	U069	B	100(45.4)
Butyric acid.....	107926 79312		5000	1		D	5000(2270)

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CAS No.	Regulatory Synonyms	Statutory			Proposed RQ	
			RQ	Code ††	RCRA Waste Number	Category	Pounds(Kg)
Cacodylic acid	75605	Hydroxydimethylarsine oxide	1*	4	U136		#
Cadmium †	7440439		1*	2			###
Cadmium acetate	543908		100	1			###
CADMIUM AND COMPOUNDS			1*	2			**
Cadmium bromide	7789426		100	1			###
Cadmium chloride	10108642		100	1			###
Calcium arsenate	7778441		1000	1			###
Calcium arsenite	52740166		1000	1			###
Calcium carbide	75207		5000	1		A	10(4.54)
Calcium chromate	13765190	Chromic acid, calcium salt	1000	1,4	U032		###
Calcium cyanide	592018		10	1,4	P021	A	10(4.54)
Calcium dodecylbenzene sulfonate	26264062		1000	1		C	1000(454)
Calcium hypochlorite	7778543		100	1		A	10(4.54)
Camphene, octachloro-	8001352	Toxaphene	1	1,2,4	P123	X	1(0.454)
Caplan	133062		10	1			##
Carbamic acid, ethyl ester	51796	Ethyl carbamate (Urethan)	1*	4	U238		#
Carbamic acid, methylnitroso-ethyl ester	615532	N-Nitroso-N-methylurethane	1*	4	U178		#
Carbamide, N-ethyl-N-nitroso-	759739	N-Nitroso-N-ethylurea	1*	4	U176		#
Carbamide, N-methyl-N-nitroso	684935	N-Nitroso-N-methylurea	1*	4	U177		#
Carbamide, thio-	62566	Thiourea	1*	4	U219		#
Carbamimidoseleonic acid	630104	Selenourea	1*	4	P103		##
Carbamoyl chloride, dimethyl-	79447	Dimethylcarbamoyl chloride	1*	4	U097		#
Carbaryl	63252		100	1		B*	100(45.4)
Carbofuran	1563662		10	1		A	10(4.54)
Carbon bisulfide	75150	Carbon disulfide	5000	1,4	P022		##
Carbon disulfide	75150	Carbon bisulfide	5000	1,4	P022		##
Carbonic acid, dithallium (I) salt	6533739	Thallium(I) carbonate	1*	4	U215		##
Carbonochloridic acid, methyl ester	79221	Methyl chlorocarbonate	1*	4	U156	C	1000(454)
Carbon oxyfluoride	353504	Carbonyl fluoride	1*	4	U033	C	1000(454)
Carbon tetrachloride	56235	Methane, tetrachloro-	5000	1,2,4	U211		###
Carbonyl chloride	75445	Phosgene	5000	1,4	P095	C	1000(454)
Carbonyl fluoride	353504	Carbon oxyfluoride	1*	4	U033	C	1000(454)
Chloral	75876	Acetaldehyde, trichloro-	1*	4	U034		#
Chlorambucil	305033	Butanoic acid, 4-[bis(2-chloroethyl)amino]benzene-	1*	4	U035		#
CHLORDANE (TECHNICAL MIXTURE AND METABOLITES).			1*	2			**
Chlordane	57749	Chlordane, technical	1	1,2,4	U036	X	1(0.454)
Chlordane, technical	57749	Chlordane	1	1,2,4	U036	X	1(0.454)
4-Chloro-m-cresol	59507	p-Chloro-m-cresol	1*	2,4	U039	D	5000(2270)
p-Chloro-m-cresol	59507	Phenol, 4-chloro-3-methyl-	1*	2,4	U039	D	5000(2270)
CHLORINATED BENZENES			1*	2			**

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CAS No.	Regulatory Synonyms	Statutory			Proposed RQ	
			RQ	Code ††	RCRA Waste Number	Category	Pounds(Kg)
CHLORINATED ETHANES.....			1*	2			**
CHLORINATED NAPHTHALENE.....			1*	2			**
CHLORINATED PHENOLS.....			1*	2			**
Chlorine	7782505		10	1		A	10(4.54)
Chlorine cyanide.....	506774	Cyanogen chloride.....	10	1,4	P033	A	10(4.54)
Chloronaphazine.....	494031	2-Naphthylamine, N,N-bis(2-chloroethyl)-.....	1*	4	U026		#
Chloroacetaldehyde.....	107200	Acetaldehyde, chloro-.....	1*	4	P023	C	1000(454)
CHLOROALKYL ETHERS.....			1*	2			**
p-Chloroaniline.....	106478	Benzenamine, 4-chloro-.....	1*	4	P024	C	1000(454)
Chlorobenzene	108907	Benzene, chloro-.....	100	1,2,4	U037	B	100(45.4)
Chlorodibromomethane.....	124481		1*	2		B	100(45.4)
1-Chloro-2,3-epoxypropane.....	106898	Epichlorohydrin..... Oxirane, 2-(chloromethyl)-.....	1000	1,4	U041		###
Chloroethane	75003		1*	2			##
2-Chloroethyl vinyl ether.....	110758	Ethene, 2-chloroethoxy-.....	1*	2,4	U042	C	1000(454)
Chloroform	67663	Methane, trichloro-.....	5000	1,2,4	U044		#
Chloromethyl methyl ether.....	107302	Methane, chloromethoxy-.....	1*	4	U046		###
beta-Chloronaphthalene.....	91587	2-Chloronaphthalene..... Naphthalene, 2-chloro-.....	1*	2,4	U047	D	5000(2270)
2-Chloronaphthalene.....	91587	beta-Chloronaphthalene..... Naphthalene, 2-chloro-.....	1*	2,4	U047	D	5000(2270)
2-Chlorophenol	95578	o-Chlorophenol..... Phenol, 2-chloro-.....	1*	2,4	U048	B	100(45.4)
o-Chlorophenol	95578	2-Chlorophenol..... Phenol, 2-chloro-.....	1*	2,4	U048	B	100(45.4)
4-Chlorophenyl phenyl ether.....	7005723		1*	2		D	5000(2270)
1-(o-Chlorophenyl)thiourea.....	5344821	Thiourea, (2-chlorophenyl)-.....	1*	4	P026	B	100(45.4)
3-Chloropropionitrile.....	542767	Propanenitrile, 3-chloro-.....	1*	4	P027	C	1000(454)
Chlorosulfonic acid.....	7780945		1000	1		C	1000(454)
4-Chloro-o-toluidine, hydrochloride.....	3165933	Benzenamine, 4-chloro-2-methyl-, hydrochloride.....	1*	4	U049		#
Chlorpyrifos.....	2921882		1	1		X	1(0.454)
Chromic acetate.....	1066304		1000	1			##
Chromic acid.....	11115745		1000	1			###
Chromic acid, calcium salt.....	13765190	Calcium chromate.....	1000	1,4	U032		###
Chromic sulfate.....	10101538		1000	1			##
Chromium †.....	7440473		1*	2			##
CHROMIUM AND COMPOUNDS.....			1*	2			**
Chromous chloride.....	10049055		1000	1			##
Chrysene	218019	1,2-Benzphenanthrene.....	1*	2,4	U050		###
Cobaltous bromide.....	778437		1000	1		C	1000(454)
Cobaltous formate.....	544183		1000	1		C	1000(454)
Cobaltous sulfamate.....	14017415		1000	1		C	1000(454)
Copper †.....	7440508		1*	2		C	1000(454)
COPPER AND COMPOUNDS.....			1*	2			**
Copper cyanides.....	544923		1*	4	P029	A	10(4.54)
Coumaphos.....	56724		10	1		A	10(4.54)

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CAS No.	Regulatory Synonyms	Statutory			Proposed RQ	
			RQ	Code ††	RCRA Waste Number	Category	Pounds(Kg)
Creosote.....	8001589		1*	4	U051		###
Cresol(s).....	1319773	Cresylic acid.....	1000	1,4	U052		##
m-.....	108394						
o-.....	95487						
p-.....	106445						
Cresylic acid.....	1319773	Cresol(s).....	1000	1,4	U052		##
m-.....	108394						
o-.....	95487						
p-.....	106445						
Crotonaldehyde.....	123739	2-Butenal.....	100	1,4	U053	B	100(45.4)
	4170303						
Cumene.....	98828	Benzene, 1-methylethyl.....	1*	4	U055	D	5000(2270)
Cupric acetate.....	142712		100	1		B	100(45.4)
Cupric acetoarsenite.....	12002038		100	1			###
Cupric chloride.....	7447394		10	1			##
Cupric nitrate.....	3251238		100	1		B	100(45.4)
Cupric oxalate.....	5893663		100	1		B	100(45.4)
Cupric sulfate.....	7758987		10	1			##
Cupric sulfate ammoniated.....	10380297		100	1		B	100(45.4)
Cupric tartrate.....	815827		100	1			##
CYANIDES.....			1*	2			**
Cyanides (soluble cyanide salts), not elsewhere specified.....	57125		1*	4	P030	A	10(4.54)
Cyanogen.....	460195		1*	4	P031	B	100(45.4)
Cyanogen bromide.....	506683	Bromine cyanide.....	1*	4	U246	C	1000(454)
Cyanogen chloride.....	506774	Chlorine cyanide.....	10	1,4	P033	A	10(4.54)
1,4-Cyclohexadienedione.....	106514	p-Benzoquinone.....	1*	4	U197		##
Cyclohexane.....	110827	Benzene, hexahydro.....	1000	1,4	U056	C	1000(454)
Cyclohexanone.....	108941		1*	4	U057	D	5000(2270)
1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro.....	77474	Hexachlorocyclopentadiene.....	1	1,2,4	U130	X	1(0.454)
Cyclophosphamide.....	50180	2H-1,3,2-Oxazaphosphorine,2-[bis(2-chloroethyl)amino]tetrahydro-2-oxide.....	1*	4	U058		#
2,4-D Acid.....	94757	2,4-D, salts and esters..... 2,4-Dichlorophenoxyacetic acid, salts and esters	100	1,4	U240	B	100(45.4)
2,4-D Esters.....	94111 94791 94804 1320189 1926387 1928816 1929733 2971382 25168267 53467111		100	1		B	100(45.4)
2,4-D, salts and esters.....	94757	2,4-D Acid..... 2,4-Dichlorophenoxyacetic acid, salts and esters	100	1,4	U240	B	100(45.4)
Daunomycin.....	20830813	5,12-Naphthacenedione, (8s-cis)-8-acetyl-10-[3-amino-2,3,6-trideoxy-alpha-L-lyxo-hexopyranoxyl]oxyl-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy.....	1*	4	U059		#
DDD.....	72548	4,4' DDD..... Dichlorodiphenyl dichloroethane TDE	1	1,2,4	U060	X	1(0.454)
4,4' DDD.....	72548	DDD..... Dichlorodiphenyl dichloroethane TDE	1	1,2,4	U060	X	1(0.454)
DDE.....	72559	4,4' DDE.....	1*	2		X	1(0.454)
4,4' DDE.....	72559	DDE.....	1*	2		X	1(0.454)

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CAS No.	Regulatory Synonyms	Statutory			Proposed RQ	
			RQ	Code ††	RCRA Waste Number	Category	Pounds(Kg)
DDT.....	50293	4,4' DDT..... Dichlorodiphenyl trichloroethane	1	1,2,4	U061	X	1(0.454)
4,4' DDT.....	50293	DDT..... Dichlorodiphenyl trichloroethane	1	1,2,4	U061	X	1(0.454)
DDT AND METABOLITES.....			1*	2			**
Decachlorooctahydro-1,3,4-metheno-2H-cyclobuta[c,d]-pentalen-2-one.....	143500	Kepon.....	1	1,4	U142	X	1(0.454)
Diallate.....	2303164	S-(2,3-Dichloroallyl) diisopropylthiocarbamate.....	1*	4	U062		#
Diamine.....	302012	Hydrazine.....	1*	4	U133		#
Diaminotoluene.....	95307	Toluenediamine.....	1*	4	U221		#
Diazinon.....	333415		1	1		A	10(4.54)
Dibenz[a,h]anthracene.....	53703	1,2,5,6-Dibenzanthracene..... Dibenzo[a,h]anthracene	1*	2,4	U063		###
1,2,5,6-Dibenzanthracene.....	53703	Dibenz[a,h]anthracene..... Dibenzo[a,h]anthracene	1*	2,4	U063		###
Dibenzo[a,h]anthracene.....	53703	Dibenz[a,h]anthracene..... 1,2,5,6-Dibenzanthracene	1*	2,4	U063		###
1,2,7,8-Dibenzopyrene.....	189559	Dibenz[a,i]pyrene.....	1*	4	U064		#
Dibenz[a,i]pyrene.....	189559	1,2,7,8-Dibenzopyrene.....	1*	4	U064		#
1,2-Dibromo-3-chloropropane.....	96128	Propane, 1,2-dibromo-3-chloro.....	1*	4	U066		#
Dibutyl phthalate.....	84742	1,2-Benzenedicarboxylic acid,dibutyl ester..... Di-n-butyl phthalate n-Butyl phthalate	100	1,2,4	U069	B	100(45.4)
Di-n-butyl phthalate.....	84742	1,2-Benzenedicarboxylic acid,dibutyl ester..... n-Butyl phthalate Dibutyl phthalate	100	1,2,4	U069	B	100(45.4)
Dicamba.....	1918309		1000	1		C	1000(454)
Dichlobenil.....	1194656		1000	1		C	1000(454)
Dichlone.....	117806		1	1		X	1(0.454)
S-(2,3-Dichloroallyl) diisopropylthiocarbamate.....	2303164	Diallate.....	1*	4	U062		#
3,5-Dichloro-N-(1,1-dimethyl-2-propynyl)benzamide.....	23950585	Pronamide.....	1*	4	U192	D	5000(2270)
1,4-Dichloro-2-butene.....	764410	2-Butene, 1,4-dichloro.....	1*	4	U074	X	1(0.454)
Dichloro diphenyl dichloroethane.....	72548	DDD..... 4,4' DDD TDE	1	1,2,4	U060	X	1(0.454)
Dichlorobenzene (mixed).....	25321226		100	1		B	100(45.4)
1,2-Dichlorobenzene.....	95501	Benzene, 1,2-dichloro..... o-Dichlorobenzene	1*	2,4	U070	B	100(45.4)
1,3-Dichlorobenzene.....	541731	Benzene, 1,3-dichloro..... m-Dichlorobenzene	1*	2,4	U071	B	100(45.4)
1,4-Dichlorobenzene.....	106467	Benzene, 1,4-dichloro..... p-Dichlorobenzene	1*	2,4	U072	B	100(45.4)
m-Dichlorobenzene.....	541731	Benzene, 1,3-dichloro..... 1,3-Dichlorobenzene	1*	2,4	U071	B	100(45.4)
o-Dichlorobenzene.....	95501	Benzene, 1,2-dichloro..... 1,2-Dichlorobenzene	1*	2,4	U070	B	100(45.4)
p-Dichlorobenzene.....	106467	Benzene, 1,4-dichloro..... 1,4-Dichlorobenzene	1*	2,4	U072	B	100(45.4)
DICHLOROBENZIDINE.....			1*	2			**
3,3'-Dichlorobenzidine.....	91941	(1,1'-Biphenyl)-4,4'-diamine,3,3'-dichloro.....	1*	2,4	U073		###
Dichlorobromomethane.....	75274		1*	2		D	5000(2270)
Dichlorodifluoromethane.....	75718	Methane, dichlorodifluoro.....	1*	4	U075	D	5000(2270)

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CAS No.	Regulatory Synonyms	Statutory			Proposed RQ	
			RQ	Code ††	RCRA Waste Number	Category	Pounds(Kg)
Dichlorodiphenyl trichloroethane.....	50293	DDT..... 4,4' DDT	1	1,2,4	U061	X	1(0.454)
1,1-Dichloroethane.....	75343	Ethane, 1,1-dichloro..... Ethylidene dichloride	1*	2,4	U076	C	1000(454)
1,2-Dichloroethane.....	107062	Ethane, 1,2-dichloro..... Ethylene dichloride	5000	1,2,4	U077		###
1,1-Dichloroethylene.....	75354	Ethene, 1,1-dichloro..... Vinylidene chloride	5000	1,2,4	U078		###
1,2-trans-Dichloroethylene.....	156905	1,2-trans-Dichloroethylene..... Ethene, trans-1,2-dichloro-	1*	2,4	U079	C	1000(454)
Dichloroethyl ether.....	111444	Bis (2-chloroethyl) ether..... Ethane, 1,1'-oxybis[2-chloro-	1*	2,4	U025		#
2,4-Dichlorophenol.....	120832	Phenol, 2,4-dichloro.....	1*	2,4	U081	B	100(45.4)
2,6-Dichlorophenol.....	87650	Phenol, 2,6-dichloro.....	1*	4	U082	B	100(45.4)
2,4-Dichlorophenoxyacetic acid, salts and esters.....	94757	2,4-D Acid..... 2,4-D, salts and esters	100	1,4	U240	B	100(45.4)
Dichlorophenylarsine.....	698286	Phenyl dichloroarsine.....	1*	4	P036		###
Dichloropropane.....	26638197		5000	1		C	1000(454)
1,2-Dichloropropane.....	78875	Propylene dichloride.....	1*	2,4	U083	C	1000(454)
Dichloropropane - Dichloropropene mixture.....	8009198		5000	1		B	100(45.4)
1,3-Dichloropropene.....	542756	Propene, 1,3-dichloro.....	1*	2,4	U084	B	100(45.4)
Dichloropropene.....	26952238		5000	1		B	100(45.4)
2,2-Dichloropropionic acid.....	75990		5000	1		D	5000(2270)
Dichlorvos.....	62737		10	1		A	10(4.54)
Dieldrin.....	60571	1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo,exo-1,4:5,8-dimethanonaphthalene.	1	1,2,4	P037	X	1(0.454)
1,2:3,4-Diepoxybutane.....	1464535	2,2'-Bioxirane.....	1*	4	U085		#
Diethylamine.....	109897		1000	1		C	1000(454)
Diethylarsine.....	692422	Arsine, diethyl.....	1*	4	P038		###
1,4-Diethylene dioxide.....	123911	1,4-Dioxane.....	1*	4	U108		#
N,N'-Diethylhydrazine.....	1615801	Hydrazine, 1,2-diethyl.....	1*	4	U086		#
O,O-Diethyl S-[2-(ethylthio)ethyl]phosphorodithioate.....	298044	Disulfoton.....	1	1,4	P039	X	1(0.454)
O,O-Diethyl S-Methyl Dithiophosphate.....	3288582	Phosphorodithioic acid, O,O-diethyl S-methylester.....	1*	4	U087	D	5000(2270)
Diethyl-p-nitrophenyl phosphate.....	311455	Phosphoric acid, diethyl p-nitrophenyl ester.....	1*	4	P041	B	100(45.4)
Diethyl phthalate.....	84662	1,2-Benzenedicarboxylic acid, diethyl ester.....	1*	2,4	U088	B	100(45.4)
O,O-Diethyl O-pyrazinyl phosphorothioate.....	297972	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester.....	1*	4	P040	B	100(45.4)
Diethylstilbestrol.....	56531	4,4'-Stilbenediol, alpha, alpha'-diethyl.....	1*	4	U089		#
1,2-Dihydro-3,6-pyridazinedione.....	123331	Maleic hydrazide.....	1*	4	U148	D	5000(2270)
Dihydrosafrole.....	94586	Benzene, 1,2-methylenedioxy-4-propyl.....	1*	4	U090		#
Diisopropyl fluorophosphate.....	55914	Phosphorofluoric acid, bis(1-methylethyl) ester.....	1*	4	P043	B	100(45.4)
Dimethoate.....	60515	Phosphorodithioic acid, O,O-dimethyl S-[2(methylamino)-2-oxoethyl] ester.....	1*	4	P044	A	10(4.54)
3,3'-Dimethoxybenzidine.....	119904	(1,1'-Biphenyl)-4,4'-diamine, 3,3'-dimethoxy.....	1*	4	U091		#
Dimethylamine.....	124403	Methanamine, N-methyl.....	1000	1,4	U092		##
Dimethylaminoazobenzene.....	60117	Benzenamine, N,N-dimethyl-4-phenylazo.....	1*	4	U093		#
7,12-Dimethylbenz[a]anthracene.....	57976	1,2-Benzanthracene, 7,12-dimethyl.....	1*	4	U094		#
3,3'-Dimethylbenzidine.....	119937	(1,1'-Biphenyl)-4,4'-diamine, 3,3'-dimethyl.....	1*	4	U095		#
alpha, alpha-Dimethylbenzylhydroperoxide.....	80159	Hydroperoxide, 1-methyl-1-phenylethyl.....	1*	4	U096	A	10(4.54)

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CAS No.	Regulatory Synonyms	Statutory			Proposed RQ	
			RQ	Code ††	RCRA Waste Number	Category	Pounds(Kg)
3,3-Dimethyl-1-(methylthio)-2-butanone,O-[(methylamino)carbonyl] oxime.	39196184	Thiofanox.....	1*	4	P045	B	100(45.4)
Dimethylcarbamoyl chloride.....	79447	Carbamoyl chloride, dimethyl.....	1*	4	U097		#
1,1-Dimethylhydrazine.....	57147	Hydrazine, 1,1-dimethyl.....	1*	4	U098		#
1,2-Dimethylhydrazine.....	540738	Hydrazine, 1,2-dimethyl.....	1*	4	U099		#
O,O-Dimethyl O-p-nitrophenylphosphorothioate.....	298000	Methyl parathion.....	100	1,4	P071		##
Dimethylnitrosamine.....	62759	N-Nitrosodimethylamine.....	1*	2,4	P082		#
alpha, alpha-Dimethylphenethylamine.....	122098	Ethanamine, 1,1-dimethyl-2-phenyl.....	1*	4	P046	D	5000(2270)
2,4-Dimethylphenol.....	105679	Phenol, 2,4-dimethyl.....	1*	2,1	U101	B	100(45.4)
Dimethyl phthalate.....	131113	1,2-Benzenedicarboxylic acid, dimethyl ester.....	1*	2,4	U102	D	5000(2270)
Dimethyl sulfate.....	77781	Sulfuric acid, dimethyl ester.....	1*	4	U103		#
Dinitrobenzene (mixed).....	25154545		1000	1		B	100(45.4)
m-.....	99650						
o-.....	528290						
p-.....	100254						
4,6-Dinitro-o-cresol and salts.....	534521	Phenol 2,4-dinitro-6-methyl-, and salts.....	1*	2,4	P047	B	100(45.4)
4,6-Dinitro-o-cyclohexylphenol.....	131895	Phenol, 2-cyclohexyl-4,6-dinitro.....	1*	4	P034	B	100(45.4)
Dinitrophenol.....	25550587		1000	1		B	100(45.4)
2,5-.....	329715						
2,6-.....	573568						
2,4-Dinitrophenol.....	51285	Phenol, 2,4-dinitro.....	1*	2,4	P048	B	100(45.4)
Dinitrotoluene.....	25321146		1000	1,2		B	100(45.4)
2,4-Dinitrotoluene.....	121142	Benzene, 1-methyl-2,4-dinitro.....	1*	2,4	U105	B	100(45.4)
2,6-Dinitrotoluene.....	606202	Benzene, 1-methyl-2,6-dinitro.....	1*	2,4	U106	B	100(45.4)
Dinoseb.....	88857	Phenol, 2,4-dinitro-6-(1-methylpropyl).....	1*	4	P020	C	1000(454)
Di-n-octyl phthalate.....	117840	1,2-Benzenedicarboxylic acid, di-n-octyl ester.....	1*	2,4	U107	D	5000(2270)
1,4-Dioxane.....	123911	1,4-Diethylene dioxide.....	1*	4	U108		#
DIPHENYLHYDRAZINE.....			1*	2			..
1,2-Diphenylhydrazine.....	122667	Hydrazine, 1,2-diphenyl.....	1*	2,4	U109		###
Diphosphoramidate, octamethyl.....	152169	Octamethylpyrophosphoramidate.....	1*	4	P085	B	100(45.4)
Dipropylamine.....	142847	1-Propanamine, N-propyl.....	1*	4	U110	C	5000(2270)
Di-n-propylnitrosamine.....	621647	N-Nitrosodi-n-propylamine.....	1*	2,4	U111		#
Diquat.....	85007		1000	1		C	1000(454)
	2764729						
Disulfoton.....	298044	O,O-Diethyl S-[2-(ethylthio)ethyl]phosphorodithioate.....	1	1,4	P039	X	1(0.454)
2,4-Dithiobiuret.....	541537	Thioimidodicarbonic diamide.....	1*	4	P049	B	100(45.4)
Dithiopyrophosphoric acid, tetraethyl ester.....	3689245	Tetraethylthiopyrophosphate.....	1*	4	P109	B	100(45.4)
Diuron.....	330541		100	1		B	100(45.4)
Dodecylbenzenesulfonic acid.....	27176870		1000	1		C	1000(454)
Endosulfan.....	115297	5-Norbornene-2,3-dimethanol, 1,4,5,6,7,7-hexachloro, cyclic sulfite.....	1	1,2,4	P050	X	1(0.454)
alpha - Endosulfan.....	959988		1*	2		X	1(0.454)
beta - Endosulfan.....	33213659		1*	2		X	1(0.454)
ENDOSULFAN AND METABOLITES.....			1*	2			..
Endosulfan sulfate.....	1031078		1*	2		X	1(0.454)
Endothall.....	145733	7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid.....	1*	4	P088	C	1000(454)
Endrin.....	72208	1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo,endo-1,4:5,8-dimethanonaphthalene.....	1	1,2,4	P051	X	1(0.454)

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CAS No.	Regulatory Synonyms	Statutory			Proposed RQ	
			RQ	Code ††	RCRA Waste Number	Category	Pounds(Kg)
Endrin aldehyde.....	7421934		1*	2		X	1(0.454)
ENDRIN AND METABOLITES.....			1*	2			**
Epichlorohydrin.....	106898	1-Chloro-2,3-epoxypropane..... Oxirane, 2-(chloromethyl)-	1000	1,4	U041		###
Epinephrine.....	51434	1,2-Benzenediol,4-[1-hydroxy-2-(methylamino)ethyl]-.....	1*	4	P042	C	1000(454)
Ethanal.....	75070	Acetaldehyde.....	1000	1,4	U001	C	1000(454)
Ethanamine, 1,1-dimethyl-2-phenyl-.....	122098	alpha,alpha-Dimethylphenethylamine.....	1*	4	P046	D	5000(2270)
Ethanamine, N-ethyl-N-nitroso-.....	55185	N-Nitrosodiethylamine.....	1*	4	U174		#
Ethane, 1,2-dibromo-.....	106934	Ethylene dibromide.....	1000	1,4	U067		#
Ethane, 1,1-dichloro-.....	75343	1,1-Dichloroethane..... Ethylidene dichloride	1*	2,4	U076	C	1000(454)
Ethane, 1,2-dichloro-.....	107062	1,2-Dichloroethane..... Ethylene dichloride	5000	1,2,4	U077		###
Ethane, 1,1,1,2,2,2-hexachloro-.....	67721	Hexachloroethane.....	1*	2,4	U131		###
Ethane, 1,1'-(methylenebis(oxy))bis[2-chloro-.....	111911	Bis(2-chloroethoxy) methane.....	1*	2,4	U024	C	1000(454)
Ethane, 1,1'-oxybis-.....	60297	Ethyl ether.....	1*	4	U117	B	100(45.4)
Ethane, 1,1'-oxybis[2-chloro-.....	111444	Bis (2-chloroethyl) ether..... Dichloroethyl ether	1*	2,4	U025		#
Ethane, pentachloro-.....	76017	Pentachloroethane.....	1*	4	U184		##
Ethane, 1,1,1,2,2-tetrachloro-.....	630206	1,1,1,2-Tetrachloroethane.....	1*	4	U208		###
Ethane, 1,1,2,2-tetrachloro-.....	79345	1,1,2,2-Tetrachloroethane.....	1*	2,4	U209		###
Ethane, 1,1,2-trichloro-.....	79005	1,1,2-Trichloroethane.....	1*	2,4	U227		###
Ethane, 1,1,1-trichloro-2,2-bis(p-methoxyphenyl).....	72435	Methoxychlor.....	1	1,4	U247	X	1(0.454)
1,2-Ethanediylbiscarbamodithioic acid.....	111546	Ethylenebis(dithiocarbamic acid).....	1*	4	U114	D	5000(2270)
Ethanenitrile.....	75058	Acetonitrile.....	1*	4	U003	C	1000(454)
Ethanethioamide.....	62555	Thioacetamide.....	1*	4	U218		#
Ethanol, 2,2'-(nitrosoimino)bis-.....	1116547	N-Nitrosodiethanolamine.....	1*	4	U173		#
Ethanone, 1-phenyl-.....	98862	Acetophenone.....	1*	4	U004	D	5000(2270)
Ethanoyl chloride.....	75365	Acetyl chloride.....	5000	1,4	U006	D	5000(2270)
Ethenamine, N-methyl-N-nitroso-.....	4549400	N-Nitrosomethylvinylamine.....	1*	4	P084		#
Ethene, chloro-.....	75014	Vinyl chloride.....	1*	2,3,4	U043		###
Ethene, 2-chloroethoxy-.....	110758	2-Chloroethyl vinyl ether.....	1*	2,4	U042	C	1000(454)
Ethene, 1,1-dichloro-.....	75354	1,1-Dichloroethylene..... Vinylidene chloride	5000	1,2,4	U078		###
Ethene, 1,1,2,2-tetrachloro-.....	127184	Tetrachloroethylene.....	1*	2,4	U210		###
Ethene, trans-1,2-dichloro-.....	156605	1,2-trans-Dichloroethylene.....	1*	2,4	U079	C	1000(454)
Ethion.....	563122		10	1			##
Ethyl acetate.....	141786	Acetic acid, ethyl ester.....	1*	4	U112	D	5000(2270)
Ethyl acrylate.....	140885	2-Propenoic acid, ethyl ester.....	1*	4	U113	D	5000(2270)
Ethylbenzene.....	100414		1000	1,2		C	1000(454)
Ethyl carbamate (Urethan).....	51796	Carbamic acid, ethyl ester.....	1*	4	U236		#
Ethyl cyanide.....	107120	Propanenitrile.....	1*	4	P101	A	10(4.54)
Ethyl 4,4'-dichlorobenzilate.....	510156	Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)- alpha-hydroxy-, ethyl ester.	1*	4	U038		#
Ethylene dibromide.....	106934	Ethane, 1,2-dibromo-.....	1000	1,4	U067		#
Ethylene dichloride.....	107062	1,2-Dichloroethane..... Ethane, 1,2-dichloro-	5000	1,2,4	U077		###

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CAS No.	Regulatory Synonyms	Statutory			Proposed RQ	
			RQ	Code ††	RCRA Waste Number	Category	Pounds(Kg)
Ethylene oxide.....	75218	Oxirane.....	1*	4	U115	B	100(45.4)
Ethylenedis(dithiocarbamic acid).....	111546	1,2-Ethanedithiocarbamodithioic acid.....	1*	4	U114	D	5000(2270)
Ethylenediamine.....	107153	.....	1000	1	.....	D	5000(2270)
Ethylenediamine tetraacetic acid (EDTA).....	60004	.....	5000	1	.....	D	5000(2270)
Ethylenethiourea.....	96457	2-Imidazolidinethione.....	1*	4	U118	.....	#
Ethylenimine.....	151564	Aziridine.....	1*	4	P054	.....	#
Ethyl ether.....	60297	Ethane, 1,1'-oxybis-.....	1*	4	U117	B	100(45.4)
Ethylidene dichloride.....	75343	1,1-Dichloroethane..... Ethane, 1,1-dichloro-.....	1*	2,4	U076	C	1000(454)
Ethyl methacrylate.....	97632	2-Propenoic acid, 2-methyl-, ethyl ester.....	1*	4	U118	C	1000(454)
Ethyl methanesulfonate.....	62500	Methanesulfonic acid, ethyl ester.....	1*	4	U119	.....	#
Famphur.....	52857	Phosphorothioic acid, O,O-dimethylO-[p-(dimethylamino)-sulfonyl]phenyl ester.....	1*	4	P097	C	1000(454)
Ferric ammonium citrate.....	1185575	.....	1000	1	.....	C	1000(454)
Ferric ammonium oxalate.....	2944874 55489874	.....	1000	1	.....	C	1000(454)
Ferric chloride.....	7705080	.....	1000	1	.....	C	1000(454)
Ferric dextran.....	9004664	Iron dextran.....	1*	4	U139	.....	#
Ferric fluoride.....	7783508	.....	100	1	.....	B	100(45.4)
Ferric nitrate.....	10421484	.....	1000	1	.....	C	1000(454)
Ferric sulfate.....	10028225	.....	1000	1	.....	C	1000(454)
Ferrous ammonium sulfate.....	10045893	.....	1000	1	.....	C	1000(454)
Ferrous chloride.....	7759943	.....	100	1	.....	B	100(45.4)
Ferrous sulfate.....	7720787 7782630	.....	1000	1	.....	C	1000(454)
Fluoroacetic acid, sodium salt.....	62748	Acetic acid, fluoro-, sodium salt.....	1*	4	P058	A	10(4.54)
Fluoranthene.....	205440	Benzo[<i>a</i> , <i>k</i>]fluorene.....	1*	2,4	U120	.....	#
Fluorene.....	86737	.....	1*	2	.....	.....	#
Fluorine.....	7782414	.....	1*	4	P056	A	10(4.54)
Fluoroacetamide.....	640197	Acetamide, 2-fluoro-.....	1*	4	P057	B	100(45.4)
Formaldehyde.....	50000	Methylene oxide.....	1000	1,4	U122	.....	##
Formic acid.....	64186	Methanoic acid.....	5000	1,4	U123	D	5000(2270)
Fulminic acid, mercury(II)salt.....	629864	Mercury fulminate.....	1*	4	P065	.....	##
Fumaric acid.....	110178	.....	5000	1	.....	D	5000(2270)
Furan.....	110009	Furfuran.....	1*	4	U124	B	100(45.4)
Furan, tetrahydro.....	103999	Tetrahydrofuran.....	1*	4	U213	C	1000(454)
2-Furancarboxaldehyde.....	98011	Furfural.....	1000	1,4	U125	C	1000(454)
2,5-Furandione.....	108316	Maleic anhydride.....	5000	1,4	U147	D	5000(2270)
Furfural.....	98011	2-Furancarboxaldehyde.....	1000	1,4	U125	C	1000(454)
Furfuran.....	110009	Furan.....	1*	4	U124	B	100(45.4)
D-Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido).....	18883664	Streptozotocin.....	1*	4	U206	.....	#
Glycidylaldehyde.....	765344	1-Propanal, 2,3-epoxy.....	1*	4	U126	.....	#
Guanidine, N-nitroso-N-methyl-N'-nitro.....	70257	N-Methyl-N'-nitro-N-nitrosoguanidine.....	1*	4	U163	.....	#
Guthion.....	88500	.....	1	1	.....	X	1(0.454)
HALOETHERS.....	.....	.....	1*	2	.....	.....	**
HALOMETHANES.....	.....	.....	1*	2	.....	.....	**

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CAS No.	Regulatory Synonyms	Statutory			Proposed RQ	
			RQ	Code ††	RCRA Waste Number	Category	Pounds(Kg)
Heptachlor.....	76448	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-	1	1,2,4	P059	X	1(0.454)
HEPTACHLOR AND METABOLITES.....			1*	2			**
Heptachlor epoxide.....	1024573		1*	2		X	1(0.454)
Hexachlorobenzene.....	118741	Benzene, hexachloro.....	1*	2,4	U127		###
Hexachlorobutadiene.....	87683	1,3-Butadiene, 1,1,2,3,4,4-hexachloro.....	1*	2,4	U128		###
HEXACHLOROCYCLOHEXANE (all isomers).....	(N.A.)		1*	2			**
Hexachlorocyclohexane (gamma isomer).....	58899	gamma - BHC..... Lindane	1	1,2,4	U129	X	1(0.454)
Hexachlorocyclopentadiene.....	77474	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro.....	1	1,2,4	U130	X	1(0.454)
1,2,3,4,10,10-Hexachloro-8,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo,endo-1,4:5,8-dimethanonaphthalene.	72208	Endrin.....	1	1,2,4	P051	X	1(0.454)
1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-endo,exo-1,4:5,8-dimethanonaphthalene.	60571	Dieldrin.....	1	1,2,4	P037	X	1(0.454)
Hexachloroethane.....	67721	Ethane, 1,1,1,2,2,2-hexachloro.....	1*	2,4	U131		###
Hexachlorohexahydro-endo,endo-dimethanonaphthalene..	465736	1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4,5,8-endo,endo-dimethanonaphthalene.	1*	4	P060	X	1(0.454)
1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4,5,8-endo,endo-dimethanonaphthalene.	465736	Hexachlorohexahydro-endo,endo-dimethanonaphthalene..	1*	4	P060	X	1(0.454)
1,2,3,4,10-10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-endo,exo-dimethanonaphthalene.	309002	Aldrin.....	1	1,2,4	P004	X	1(0.454)
Hexachlorophene.....	70304	2,2'-Methylenebis(3,4,6-trichlorophenol).....	1*	4	U132		##
Hexachloropropene.....	1888717	1-Propene, 1,1,2,3,3,3-hexachloro.....	1*	4	U243	C	1000(454)
Hexaethyl tetraphosphate.....	757584	Tetraphosphoric acid, hexaethyl ester.....	1*	4	P062	B	100(45.4)
Hydrazine.....	302012	Diamine.....	1*	4	U133		#
Hydrazine, 1,2-diethyl.....	1615801	N,N'-Diethylhydrazine.....	1*	4	U086		#
Hydrazine, 1,1-dimethyl.....	57147	1,1-Dimethylhydrazine.....	1*	4	U098		#
Hydrazine, 1,2-dimethyl.....	540738	1,2-Dimethylhydrazine.....	1*	4	U099		#
Hydrazine, 1,2-diphenyl.....	122687	1,2-Diphenylhydrazine.....	1*	2,4	U109		###
Hydrazine, methyl.....	60344	Methyl hydrazine.....	1*	4	P068	A	10(4.54)
Hydrazinecarbothioamide.....	79196	Thiosemicarbazide.....	1*	4	P116	B	100(45.4)
Hydrochloric acid.....	7647010		5000	1		D	5000(2270)
Hydrocyanic acid.....	74908	Hydrogen cyanide.....	10	1,4	P063	A	10(4.54)
Hydrofluoric acid.....	7664393	Hydrogen fluoride.....	5000	1,4	U134	B	100(45.4)
Hydrogen cyanide.....	74908	Hydrocyanic acid.....	10	1,4	P063	A	10(4.54)
Hydrogen fluoride.....	7664393	Hydrofluoric acid.....	5000	1,4	U134	B	100(45.4)
Hydrogen phosphide.....	7803512	Phosphine.....	1*	4	P086	B	100(45.4)
Hydrogen sulfide.....	7783064	Sulfur hydride.....	100	1,4	U135		##
Hydroperoxide, 1-methyl-1-phenylethyl.....	80159	alpha,alpha-Dimethylbenzylhydroperoxide.....	1*	4	U096	A	10(4.54)
Hydroxydimethylarsine oxide.....	75605	Cacodylic acid.....	1*	4	U136		#
2-Imidazolidinethione.....	96457	Ethylenethiourea.....	1*	4	U116		#
Indeno(1,2,3-cd)pyrene.....	193395	1,10-(1,2-Phenylene)pyrene.....	1*	2,4	U137		###
Iron dextran.....	9004684	Ferric dextran.....	1*	4	U139		#
Isobutyl alcohol.....	78831	1-Propanol, 2-methyl.....	1*	4	U140	D	5000(2270)
Isocyanic acid, methyl ester.....	624839	Methyl isocyanate.....	1*	4	P064	B	100(45.4)
Isophorone.....	78591		1*	2		D	5000(2270)
Isoprene.....	78795		1000	1			##

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	C/S No.	Regulatory Synonyms	Statutory			Proposed RQ	
			RQ	Code ††	RCRA Waste Number	Category	Pounds(Kg)
Isopropanolamine dodecylbenzenesulfonate.....	42504461		1000	1		C	1000(454)
Isosafrole.....	120581	Benzene, 1,2-methylenedioxy-4-propenyl.....	1*	4	U141		#
3(2H)-Isioxazolone, 5-(aminomethyl)-.....	2763964	5-(Aminomethyl)-3-isoxazolol.....	1*	4	P007	C	1000(454)
Kelthane.....	115322		5000	1		D	5000(2270)
Kepone.....	143500	Decachlorooctahydro-1,3,4-metheno-2H-cyclobuta[c,d]-pentalen-2-one.	1	1,4	U142	X	1(0.454)
Lasiocarpine.....	303344		1*	4	U143		#
Lead †.....	7439921		1*	2			##
Lead acetate.....	301042	Acetic acid, lead salt.....	5000	1,4	U144		###
LEAD AND COMPOUNDS.....			1*	2			**
Lead arsenate.....	7784409 7645252 10102484		5000	1			###
Lead chloride.....	7758954		5000	1			##
Lead fluoborate.....	13314965		5000	1			##
Lead fluoride.....	7783462		1000	1			##
Lead iodide.....	10101630		5000	1			##
Lead nitrate.....	10099748		5000	1			##
Lead phosphate.....	7446277	Phosphoric acid, lead salt.....	1*	4	U145		###
Lead stearate.....	7428480 1072351 56189094		5000	1			##
Lead subacetate.....	1335326		1*	4	U146		###
Lead sulfate.....	15739807 7446142		5000	1			##
Lead sulfide.....	1314870		5000	1			##
Lead thiocyanate.....	592870		5000	1			##
Lindane.....	58899	gamma - BHC..... Hexachlorocyclohexane (gamma isomer)	1	1,2,4	U129	X	1(0.454)
Lithium chromate.....	14307358		1000	1			###
Malathion.....	121755		10	1		B	100(45.4)
Maleic acid.....	110167		5000	1		D	5000(2270)
Maleic anhydride.....	108316	2,5-Furandione.....	5000	1,4	U147	D	5000(2270)
Maleic hydrazide.....	123331	1,2-Dihydro-3,6-pyridazinedione.....	1*	4	U148	D	5000(2270)
Malononitrile.....	109773	Propanedinitrile.....	1*	4	U149	C	1000(454)
Melphalan.....	148823	Alanine, 3-[p-bis(2-chloroethyl)amino]phenyl-L.....	1*	4	U150		#
Mercaptodimethur.....	2032657		100	1		A	10(4.54)
Mercuric cyanide.....	592041		1	1		X	1(0.454)
Mercuric nitrate.....	10345940		10	1			##
Mercuric sulfate.....	7783359		10	1			##
Mercuric thiocyanate.....	592858		10	1			##
Mercurous nitrate.....	10415755 7782867		10	1			##
Mercury.....	7439976		1*	2,3,4	U151	X	1(0.454)
MERCURY AND COMPOUNDS.....			1*	2			**
Mercury, (acetato-O)phenyl.....	62384	Phenylmercuric acetate.....	1*	4	P092		##
Mercury fulminate.....	628864	Fulminic acid, mercury(II)salt.....	1*	4	P085		##
Methacrylonitrile.....	126987	2-Propenenitrile, 2-methyl.....	1*	4	U152	C	1000(454)

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CAS No.	Regulatory Synonyms	Statutory			Proposed RQ	
			RQ	Code ††	RCRA Waste Number	Category	Pounds(Kg)
Methanamine, N-methyl.....	124403	Dimethylamine.....	1000	1,4	U092		##
Methane, bromo.....	74839	Methyl bromide.....	1*	2,4	U029	C	1000(454)
Methane, chloro.....	74873	Methyl chloride.....	1*	2,4	U045		##
Methane, chloromethoxy.....	107302	Chloromethyl methyl ether.....	1*	4	U046		###
Methane, dibromo.....	74953	Methylene bromide.....	1*	4	U068	C	1000(454)
Methane, dichloro.....	75092	Methylene chloride.....	1*	2,4	U080	C	1000(454)
Methane, dichlorodifluoro.....	75718	Dichlorodifluoromethane.....	1*	4	U075	D	5000(2270)
Methane, iodo.....	74884	Methyl iodide.....	1*	4	U138		#
Methane, oxybis(chloro.....	542881	Bis(chloromethyl) ether.....	1*	4	P016		###
Methane, tetrachloro.....	56235	Carbon tetrachloride.....	5000	1,2,4	U211		###
Methane, tetranitro.....	509148	Tetranitromethane.....	1*	4	P112	A	10(4.54)
Methane, tribromo.....	75252	Bromoform.....	1*	2,4	U225	B	100(45.4)
Methane, trichloro.....	67663	Chloroform.....	5000	1,2,4	U044		#
Methane, trichlorofluoro.....	75694	Trichloromonofluoromethane.....	1*	4	U121	D	5000(2270)
Methanesulfonic acid, ethyl ester.....	62500	Ethyl methanesulfonate.....	1*	4	U119		#
Methanethiol.....	74931	Methylmercaptan..... Thiomethanol	100	1,4	U153	B	100(45.4)
Methanesulfonyl chloride, trichloro.....	594423	Trichloromethanesulfonyl chloride.....	1*	4	P118	B	100(45.4)
4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-.....	76448	Heptachlor.....	1	1,2,4	P059	X	1(0.454)
Methanoic acid.....	64186	Formic acid.....	5000	1,4	U123	D	5000(2270)
4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-.....	57749	Chlordane..... Chlordane, technical	1	1,2,4	U038	X	1(0.454)
Methanol.....	67561	Methyl alcohol.....	1*	4	U154	D	5000(2270)
Methapyriene.....	91805	Pyridine, 2-[(2-(dimethylamino)ethyl)-2-thenylaminol].....	1*	4	U155	D	5000(2270)
Methomyl.....	16752775	Acetimidic acid, N-[(methylcarbamoyl)oxy]thio-methyl ester.....	1*	4	P066	C	1000(454)
Methoxychlor.....	72435	Ethane, 1,1,1-trichloro-2,2-bis(p-methoxyphenyl).....	1	1,4	U247	X	1(0.454)
Methyl alcohol.....	67561	Methanol.....	1*	4	U154	D	5000(2270)
2-Methylaziridine.....	75558	1,2-Propylenimine.....	1*	4	P067		#
Methyl bromide.....	74839	Methane, bromo.....	1*	2,4	U029	C	1000(454)
1-Methylbutadiene.....	504609	1,3-Pentadiene.....	1*	4	U186	B	100(45.4)
Methyl chloride.....	74873	Methane, chloro.....	1*	2,4	U045		##
Methyl chlorocarbonate.....	79221	Carbonochloridic acid, methyl ester.....	1*	4	U156	C	1000(454)
Methyl chloroform.....	71556	1,1,1-Trichloroethane.....	1*	2,4	U226	C	1000(454)
4,4'-Methylenebis(2-chloroaniline).....	101144	Benzenamine, 4,4'-methylenebis(2-chloro-.....	1*	4	U158		#
2,2'-Methylenebis(3,4,6-trichlorophenol).....	70304	Hexachlorophene.....	1*	4	U132		##
3-Methylcholanthrene.....	56495	Benz[.]aceanthrylene, 1,2-dihydro-3-methyl-.....	1*	4	U157		#
Methylene bromide.....	74953	Methane, dibromo.....	1*	4	U068	C	1000(454)
Methylene chloride.....	75092	Methane, dichloro.....	1*	2,4	U080	C	1000(454)
Methylene oxide.....	50000	Formaldehyde.....	1000	1,4	U122		##
Methyl ethyl ketone.....	78933	2-Butanone.....	1*	4	U159	C	1000(454)
Methyl ethyl ketone peroxide.....	1338234	2-Butanone peroxide.....	1*	4	U160	A	10(4.54)
Methyl hydrazine.....	60344	Hydrazine, methyl-.....	1*	4	P068	A	10(4.54)
Methyl iodide.....	74884	Methane, iodo.....	1*	4	U138		#

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CAS No.	Regulatory Synonyms	Statutory			Proposed RQ	
			RQ	Code ††	RCRA Waste Number	Category	Pounds(Kg)
Methyl isobutyl ketone.....	103101	4-Methyl-2-pentanone.....	1*	4	U161	D	5000(2270)
Methyl isocyanate.....	624839	Isocyanic acid, methyl ester.....	1*	4	P064	B	100(45.4)
2-Methylfalconitrile.....	75865	Acetone cyanohydrin..... Propanenitrile, 2-hydroxy-2-methyl-	10	1,4	P069	A	10(4.54)
Methylmercaptan.....	74931	Methanethiol..... Thiomethanol	100	1,4	U153	B	100(45.4)
Methyl methacrylate.....	80626	2-Propenoic acid, 2-methyl-, methyl ester.....	5000	1,4	U162	C	1000(454)
N-Methyl-N'-nitro-N-nitrosoguanidine.....	70257	Guanidine, N-nitroso-N-methyl-N'-nitro.....	1*	4	U163		#
Methyl parathion.....	293000	O,O-Dimethyl O-p-nitrophenylphosphorothioate.....	100	1,4	P071		##
4-Methyl-2-pentanone.....	103101	Methyl isobutyl ketone.....	1*	4	U161	D	5000(2270)
Methylthiouracil.....	53042	4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo.....	1*	4	U164		#
Mevinphos.....	7763347		1	1		A	10(4.54)
Mexacarbate.....	315184		1000	1		C	1000(454)
Mitomycin C.....	53077	Azirino(2',3':3,4)pyrrolo(1,2-a)indole-4,7-dione,6-amino-8- [[(aminocarbonyloxy)methyl]-1,1a,2,8,8a,8b- hexahydro-8a-methoxy-5-methyl-,	1*	4	U010		#
Monoethylamine.....	75047		1000	1			##
Monomethylamine.....	74896		1000	1		B	100(45.4)
Naled.....	300765		10	1		A	10(4.54)
5,12-Naphthacenedione, (8s-cis)-8-acetyl-10-[(3-amino- 2,3,6-trideoxy-alpha-L-lyxo-hexopyranosyl)oxyl- 7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-,	20830813	Daunomycin.....	1*	4	U059		#
Naphthalene.....	81203		5000	1,2,4	U165	B	100(45.4)
Naphthalene, 2-chloro.....	81587	beta-Chloronaphthalene..... 2-Chloronaphthalene	1*	2,4	U047	D	5000(2270)
1,4-Naphthalenedione.....	130154	1,4-Naphthoquinone.....	1*	4	U166	D	5000(2270)
2,7-Naphthalenedisulfonic acid,3,3'-[(3,3'-dimethyl-(1,1'- biphenyl)-4,4'-diyl)-bis(azo)]bis(5-amino-4-hydroxy)- tetrasodium salt.	72571	Trypan blue.....	1*	4	U236		#
Naphtheneic acid.....	1338245		100	1		B	100(45.4)
1,4-Naphthoquinone.....	130154	1,4-Naphthalenedione.....	1*	4	U166	D	5000(2270)
1-Naphthylamine.....	154327	alpha-Naphthylamine.....	1*	4	U167		#
2-Naphthylamine.....	81598	beta-Naphthylamine.....	1*	4	U168		#
alpha-Naphthylamine.....	154327	1-Naphthylamine.....	1*	4	U167		#
beta-Naphthylamine.....	81598	2-Naphthylamine.....	1*	4	U168		#
2-Naphthylamine, N,N-bis(2-chloroethyl)-.....	484031	Chlornaphazine.....	1*	4	U026		#
alpha-Naphthylthiourea.....	68884	Thiourea, 1-naphthalenyl-.....	1*	4	P072	B	100(45.4)
Nickel †.....	7440020		1*	2			###
NICKEL AND COMPOUNDS.....			1*	2			**
Nickel ammonium sulfate.....	15669180		5000	1			##
Nickel carbonyl.....	13463393	Nickel tetracarbonyl.....	1*	4	P073		###
Nickel chloride.....	7778549 37271055		5000	1			##
Nickel cyanide.....	557197	Nickel(II) cyanide.....	1*	4	P074	A	10(4.54)
Nickel(II) cyanide.....	557197	Nickel cyanide.....	1*	4	P074	A	10(4.54)
Nickel hydroxide.....	12054487		1000	1			###
Nickel nitrate.....	14276752		5000	1			##
Nickel sulfate.....	7766814		5000	1			##
Nickel tetracarbonyl.....	13463393	Nickel carbonyl.....	1*	4	P073		###

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CAS No.	Regulatory Synonyms	Statutory			Proposed RQ	
			RQ	Code ††	RCRA Waste Number	Category	Pounds(Kg)
Nicotine and salts	54115	Pyridine, (S)-3-(1-methyl-2-pyrrolidinyl)-, and salts	1*	4	P075	B	100(45.4)
Nitric acid	7697372	.....	1000	1	.....	C	1000(454)
Nitric oxide	10102439	Nitrogen(II) oxide	1*	4	P076	A	10(4.54)
p-Nitroaniline	100016	Benzenamine, 4-nitro-	1*	4	P077	D	5000(2270)
Nitrobenzene	98953	Benzene, nitro-	1000	1,2,4	U169	C	1000(454)
Nitrogen dioxide	10102440	Nitrogen(IV) oxide	1000	1,4	P078	A	10(4.54)
Nitrogen(II) oxide	10102439	Nitric oxide	1*	4	P076	A	10(4.54)
Nitrogen(IV) oxide	10102440	Nitrogen dioxide	1000	1,4	P078	A	10(4.54)
Nitroglycerine	55630	1,2,3-Propanetriol, trinitrate-	1*	4	P081	A	10(4.54)
Nitrophenol (mixed)	25154556	.....	1000	1	.....	B	100(45.4)
m-	554847	.....	.....	.....	.....	.....	.....
o-	88755	.....	.....	.....	.....	.....	.....
p-	100027	.....	.....	.....	.....	.....	.....
p-Nitrophenol	100027	4-Nitrophenol	1*	2,4	U170	B	100(45.4)
.....	.....	Phenol, 4-nitro- .....	.....	.....	.....	.....	.....
2-Nitrophenol	88755	.....	1*	2	.....	B	100(45.4)
4-Nitrophenol	100027	p-Nitrophenol	1*	2,4	U170	B	100(45.4)
.....	.....	Phenol, 4-nitro- .....	.....	.....	.....	.....	.....
NITROPHENOLS .....	.....	.....	1*	2	.....	.....	**
2-Nitropropane	79469	Propane, 2-nitro-	1*	4	U171	C	1000(454)
NITROSAMINES .....	.....	.....	1*	2	.....	.....	**
N-Nitrosodi-n-butylamine	924163	1-Butanamine, N-butyl-N-nitroso-	1*	4	U172	.....	#
N-Nitrosodiethanolamine	1116547	Ethanol, 2,2'-(nitrosoimino)bis-	1*	4	U173	.....	#
N-Nitrosodiethylamine	55185	Ethanamine, N-ethyl-N-nitroso-	1*	4	U174	.....	#
N-Nitrosodimethylamine	62759	Dimethylnitrosamine	1*	2,4	P082	.....	#
N-Nitrosodiphenylamine	86306	.....	1*	2	.....	B	100(45.4)
N-Nitrosodi-n-propylamine	621647	Di-n-propylnitrosamine	1*	2,4	U111	.....	#
N-Nitroso-N-ethylurea	759739	Carbamide, N-ethyl-N-nitroso-	1*	4	U176	.....	#
N-Nitroso-N-methylurea	684935	Carbamide, N-methyl-N-nitroso	1*	4	U177	.....	#
N-Nitroso-N-methylurethane	615532	Carbamic acid, methylnitroso-ethyl ester	1*	4	U178	.....	#
N-Nitrosomethylvinylamine	4549400	Ethenamine, N-methyl-N-nitroso-	1*	4	P084	.....	#
N-Nitrosopiperidine	100754	Pyridine, hexahydro-N-nitroso-	1*	4	U179	.....	#
N-Nitrosopyrrolidine	930552	Pyrrole, tetrahydro-N-nitroso-	1*	4	U180	.....	#
Nitrotoluene	1321126	.....	1000	1	.....	C	1000(454)
5-Nitro-o-toluidine	99558	Benzenamine, 2-methyl-5-nitro-	1*	4	U181	.....	#
5-Norbornene-2,3-dimethanol, 1,4,5,6,7,7-hexachloro, cyclic sulfite	115297	Endosulfan	1	1,2,4	P050	X	1(0.454)
Octamethylpyrophosphoramide	152169	Diphosphoramidate, octamethyl-	1*	4	P085	B	100(45.4)
Osmium oxide	20816120	Osmium tetroxide	1*	4	P087	C	1000(454)
Osmium tetroxide	20816120	Osmium oxide	1*	4	P087	C	1000(454)
7-Oxabicyclo[2.2.1]heptane-2,3-dicarboxylic acid	145733	Endothall	1*	4	P088	C	1000(454)
1,2-Oxathiolane, 2,2-dioxide	1120714	1,3-Propane sulfone	1*	4	U193	.....	#
2H-1,3,2-Oxazaphosphorine, 2-[bis(2-chloroethyl)amino]tetrahydro-2-oxide	50180	Cyclophosphamide	1*	4	U058	.....	#
Oxirane	75218	Ethylene oxide	1*	4	U115	B	100(45.4)
Oxirane, 2-(chloromethyl)-	106898	1-Chloro-2,3-epoxypropane	1000	1,4	U041	.....	###
.....	.....	Epichlorohydrin .....	.....	.....	.....	.....	.....
Paraformaldehyde	30525894	.....	1000	1	.....	C	1000(454)

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CAS No.	Regulatory Synonyms	Statutory			Proposed RQ	
			RQ	Code ††	RCRA Waste Number	Category	Pounds(Kg)
Paraldehyde.....	123637	1,3,5-Trioxane, 2,4,6-trimethyl.....	1*	4	U182	C	1000(454)
Parathion.....	56382	Phosphorothioic acid,O,O-diethyl O-(p-nitrophenyl)ester.....	1	1,4	P089	X	1(0.454)
Pentachlorobenzene.....	608935	Benzene, pentachloro.....	1*	4	U183		##
Pentachloroethane.....	76017	Ethane, pentachloro.....	1*	4	U184		##
Pentachloronitrobenzene.....	82688	Benzene, pentachloronitro.....	1*	4	U185		###
Pentachlorophenol.....	87865	Phenol, pentachloro.....	10	1,2,4	U242	X	1(0.454)
1,3-Pentadiene.....	504609	1-Methylbutadiene.....	1*	4	U186	B	100(45.4)
Phenacetin.....	62442	Acetamide, N-(4-ethoxyphenyl).....	1*	4	U187		#
Phenanthrene.....	85018		1*	2		D	5000(2270)
Phenol.....	108952	Benzene, hydroxy.....	1000	1,2,4	U188		##
Phenol, 2-chloro.....	95578	2-Chlorophenol..... o-Chlorophenol	1*	2,4	U048	B	100(45.4)
Phenol, 4-chloro-3-methyl.....	59507	4-Chloro-m-cresol..... p-Chloro-m-cresol	1*	2,4	U039	D	5000(2270)
Phenol, 2-cyclohexyl-4,6-dinitro.....	131895	4,6-Dinitro-o-cyclohexylphenol.....	1*	4	P034	B	100(45.4)
Phenol, 2,4-dichloro.....	120832	2,4-Dichlorophenol.....	1*	2,4	U081	B	100(45.4)
Phenol, 2,6-dichloro.....	87650	2,6-Dichlorophenol.....	1*	4	U082	B	100(45.4)
Phenol, 2,4-dimethyl.....	105679	2,4-Dimethylphenol.....	1*	2,4	U101	B	100(45.4)
Phenol, 2,4-dinitro.....	51285	2,4-Dinitrophenol.....	1*	2,4	P048	B	100(45.4)
Phenol, 2,4-dinitro-6-(1-methylpropyl).....	88857	Dinoseb.....	1*	4	P020	C	1000(454)
Phenol 2,4-dinitro-6-methyl-, and salts.....	534521	4,6-Dinitro-o-cresol and salts.....	1*	2,4	P047	B	100(45.4)
Phenol, 4-nitro.....	100027	p-Nitrophenol..... 4-Nitrophenol	1*	2,4	U170	B	100(45.4)
Phenol, pentachloro.....	87865	Pentachlorophenol.....	10	1,2,4	U242	X	1(0.454)
Phenol, 2,3,4,6-tetrachloro.....	58902	2,3,4,6-Tetrachlorophenol.....	1*	4	U212	A	10(4.54)
Phenol, 2,4,5-trichloro.....	95954	2,4,5-Trichlorophenol.....	1*	4	U230		##
Phenol, 2,4,6-trichloro.....	88062	2,4,6-Trichlorophenol.....	1*	2,4	U231		###
Phenol, 2,4,6-trinitro-, ammonium salt.....	131748	Ammonium picrate.....	1*	4	P009	A	10(4.54)
Phenyl dichloroarsine.....	696286	Dichlorophenylarsine.....	1*	4	P036		###
1,10-(1,2-Phenylene)pyrene.....	193395	Indeno(1,2,3-cd)pyrene.....	1*	2,4	U137		###
Phenylmercuric acetate.....	62384	Mercury, (acetato-O)phenyl.....	1*	4	P092		##
N-Phenylthiourea.....	103855	Thiourea, phenyl.....	1*	4	P093	B	100(45.4)
Phorate.....	298022	Phosphorodithioic acid, O,O-diethyl S-(ethylthio)methyl ester.....	1*	4	P094		##
Phosgene.....	75445	Carbonyl chloride.....	5000	1,4	P095	C	1000(454)
Phosphine.....	7803512	Hydrogen phosphide.....	1*	4	P096	B	100(45.4)
Phosphoric acid.....	7664382		5000	1		D	5000(2270)
Phosphoric acid,diethyl p-nitrophenyl ester.....	311455	Diethyl-p-nitrophenyl phosphate.....	1*	4	P041	B	100(45.4)
Phosphoric acid, lead salt.....	7446277	Lead phosphate.....	1*	4	U145		###
Phosphorodithioic acid, O,O-diethyl S-methyl ester.....	3288582	O,O-Diethyl S-Methyl Dithiophosphate.....	1*	4	U087	D	5000(2270)
Phosphorodithioic acid, O,O-diethyl S-(ethylthio)methyl ester.....	298022	Phorate.....	1*	4	P094		##
Phosphorodithioic acid,O,O-dimethyl S-[2(methylamino)-2-oxoethyl] ester.....	60515	Dimethoate.....	1*	4	P044	A	10(4.54)
Phosphorofluoridic acid,bis(1-methylethyl) ester.....	55914	Diisopropyl fluorophosphate.....	1*	4	P043	B	100(45.4)
Phosphorothioic acid,O,O-diethyl O-(p-nitrophenyl)ester.....	56382	Parathion.....	1	1,4	P089	X	1(0.454)
Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester.....	297972	O,O-Diethyl O-pyrazinyl phosphorothioate.....	1*	4	P040	B	100(45.4)

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CAS No.	Regulatory Synonyms	Statutory			Proposed RQ	
			RQ	Code ††	RCRA Waste Number	Category	Pounds(Kg)
Phosphorothioic acid, O,O-dimethylO-[p-(dimethylamino)-sulfonylphenyl] ester.	52857	Famphur	1*	4	P097	C	1000(454)
Phosphorus	7723140		1	1		X	1(0.454)
Phosphorus oxychloride	10025873		5000	1		C	1000(454)
Phosphorus pentasulfide	1314803	Phosphorus sulfide..... Sulfur phosphide	100	1,4	U189	B	100(45.4)
Phosphorus sulfide.....	1314803	Phosphorus pentasulfide..... Sulfur phosphide	100	1,4	U189	B	100(45.4)
Phosphorus trichloride	7719122		5000	1		C	1000(454)
PHthalate ESTERS			1*	2			**
Phthalic anhydride	85449	1,2-Benzenedicarboxylic acid anhydride	1*	4	U190	D	5000(2270)
2-Picoline	109068	Pyridine, 2-methyl-.....	1*	4	U191	D	5000(2270)
Plumbane, tetraethyl-.....	78002	Tetraethyl lead.....	100	1,4	P110		##
POLYCHLORINATED BIPHENYLS (PCBs)	1336363		10	1,2		X	1(0.454)
POLYNUCLEAR AROMATIC HYDROCARBONS			1*	2			**
Potassium arsenate	7784410		1000	1			###
Potassium arsenite	10124502		1000	1			###
Potassium bichromate	7778509		1000	1			###
Potassium chromate	7789006		1000	1			###
Potassium cyanide	151508		10	1,4	P098	A	10(4.54)
Potassium hydroxide	1310583		1000	1		C	1000(454)
Potassium permanganate	7722647		100	1		B	100(45.4)
Potassium silver cyanide	506616		1*	4	P099	X	1(0.454)
Pronamide	23950585	3,5-Dichloro-N-(1,1-dimethyl-2-propynyl)benzamide	1*	4	U192	D	5000(2270)
1-Propanal, 2,3-epoxy-.....	765344	Glycidylaldehyde.....	1*	4	U126		#
Propanal, 2-methyl-2-(methylthio)-,O-[(methylamino) carbonyl]oxime	116063	Aldicarb.....	1*	4	P070	A	10(4.54)
1-Propanamine	107108	n-Propylamine	1*	4	U194	D	5000(2270)
1-Propanamine, N-propyl-	142847	Dipropylamine	1*	4	U110	D	5000(2270)
Propane, 1,2-dibromo-3-chloro-.....	96128	1,2-Dibromo-3-chloropropane	1*	4	U066		#
Propane, 2-nitro-.....	79469	2-Nitropropane.....	1*	4	U171	C	1000(454)
Propane, 2,2'-oxybis[2-chloro-.....	108601	Bis(2-chloroisopropyl) ether	1*	2,4	U027	C	1000(454)
1,3-Propane sultone	1120714	1,2-Oxathiolane, 2,2-dioxide	1*	4	U193		#
Propanedinitrile	109773	Malononitrile.....	1*	4	U149	C	1000(454)
Propanenitrile	107120	Ethyl cyanide	1*	4	P101	A	10(4.54)
Propanenitrile, 3-chloro-.....	542767	3-Chloropropionitrile	1*	4	P027	C	1000(454)
Propanenitrile, 2-hydroxy-2-methyl-.....	75865	Acetone cyanohydrin	10	1,4	P089	A	10(4.54)
		2-Methylactonitrile					
1,2,3-Propanetriol, trinitrate-.....	55630	Nitroglycerine	1*	4	P081	A	10(4.54)
1-Propanol, 2,3-dibromo-, phosphate (3:1)	126727	Tris(2,3-dibromopropyl) phosphate	1*	4	U235		#
1-Propanol, 2-methyl-.....	78831	Isobutyl alcohol	1*	4	U140	D	5000(2270)
2-Propanone	67641	Acetone	1*	4	U002	D	5000(2270)
2-Propanone, 1-bromo-.....	598312	Bromoacetone	1*	4	P017	C	1000(454)
Propargite	2312358		10	1		A	10(4.54)
Propargyl alcohol.....	107197	2-Propyn-1-ol	1*	4	P102	C	1000(454)
2-Propenal	107028	Acrolein.....	1	1,2,4	P003	X	1(0.454)

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CAS No.	Regulatory Synonyms	Statutory			Proposed RQ	
			RQ	Code ††	RCRA Waste Number	Category	Pounds (Kg)
2-Propenamide.....	79061	Acrylamide.....	1*	4	U007	D	5000(2270)
Propene, 1,3-dichloro-.....	542756	1,3-Dichloropropene.....	1*	2,4	U084	B	100(45.4)
1-Propene, 1,1,2,3,3,3-hexachloro-.....	1888717	Hexachloropropene.....	1*	4	U243	C	1000(454)
2-Propenenitrile.....	107131	Acrylonitrile.....	100	1,2,4	U009		###
2-Propenenitrile, 2-methyl-.....	126987	Methacrylonitrile.....	1*	4	U152	C	1000(454)
2-Propenoic acid.....	79107	Acrylic acid.....	1*	4	U008	D	5000(2270)
2-Propenoic acid, ethyl ester.....	140885	Ethyl acrylate.....	1*	4	U113	D	5000(2270)
2-Propenoic acid, 2-methyl-, ethyl ester.....	97632	Ethyl methacrylate.....	1*	4	U118	C	1000(454)
2-Propenoic acid, 2-methyl-, methyl ester.....	80626	Methyl methacrylate.....	5000	1,4	U162	C	1000(454)
2-Propen-1-ol.....	107186	Allyl alcohol.....	100	1,4	P005	B	100(45.4)
Propionic acid.....	79094	.....	5000	1		D	5000(2270)
Propionic acid, 2-(2,4,5-trichlorophenoxy)-.....	93721	Silvex 2,4,5-TP acid	100	1,4	U233	B	100(45.4)
Propionic anhydride.....	123626	.....	5000	1		D	5000(2270)
n-Propylamine.....	107108	1-Propanamine.....	1*	4	U194	D	5000(2270)
Propylene dichloride.....	78875	1,2-Dichloropropane.....	1*	2,4	U083	C	1000(454)
Propylene oxide.....	75569	.....	5000	1		B	100(45.4)
1,2-Propylenimine.....	75558	2-Methylaziridine.....	1*	4	P067		#
2-Propyn-1-ol.....	107197	Propargyl alcohol.....	1*	4	P102	C	1000(454)
Pyrene.....	129000	.....	1*	2		D	5000(2270)
Pyrethrins.....	121299 121211	.....	1000	1		C	1000(454)
4-Pyridinamine.....	504245	4-Aminopyridine.....	1*	4	P008	C	1000(454)
Pyridine.....	110861	.....	1*	4	U196		##
Pyridine, 2-[(2-(dimethylamino)ethyl)-2-thenylaminol-.....	91805	Methapyrilene.....	1*	4	U155	D	5000(2270)
Pyridine, hexahydro-N-nitroso-.....	100754	N-Nitrosopiperidine.....	1*	4	U179		#
Pyridine, 2-methyl-.....	109068	2-Picoline.....	1*	4	U181	D	5000(2270)
Pyridine, (S)-3-(1-methyl-2-pyrrolidinyl)-, and salts.....	54115	Nicotine and salts.....	1*	4	P075	B	100(45.4)
4(1H)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-.....	56042	Methylthiouracil.....	1*	4	U164		#
Pyrophosphoric acid, tetraethyl ester.....	107493	Tetraethyl pyrophosphate.....	100	1,4	P111		##
Pyrrrole, tetrahydro-N-nitroso-.....	930552	N-Nitrosopyrrolidine.....	1*	4	U189		#
Quinoline.....	91225	.....	1000	1		D	5000(2270)
RADIONUCLIDES.....			1*	3			####
Reserpine.....	50555	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyl)oxy]-, methyl ester.....	1*	4	U200	D	5000(2270)
Resorcinol.....	108463	1,3-Benzenediol.....	1000	1,4	U201	D	5000(2270)
Saccharin and salts.....	81072	1,2-Benzisothiazolin-3-one, 1,1-dioxide, and salts.....	1*	4	U202		#
Safrole.....	94597	Benzene, 1,2-methylenedioxy-4-allyl-.....	1*	4	U203		#
Selenious acid.....	7783008	.....	1*	4	U204		##
Selenium †.....	7782492	.....	1*	2			##
SELENIUM AND COMPOUNDS.....			1*	2			..
Selenium dioxide.....	7446084	Selenium oxide.....	1000	1,4	U204		##
Selenium disulfide.....	7488564	Sulfur selenide.....	1*	4	U205		##
Selenium oxide.....	7446084	Selenium dioxide.....	1000	1,4	U204		##
Selenourea.....	630104	Carbamidoselenoic acid.....	1*	4	P103		##

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CAS No.	Regulatory Synonyms	Statutory			Proposed RQ	
			RQ	Code ††	RCRA Waste Number	Category	Pounds(Kg)
L-Serine, diazoacetate (ester)	115026	Azaserine.....	1*	4	U015		#
Silver †	7440224		1*	2		C	1000(454)
SILVER AND COMPOUNDS			1*	2			**
Silver cyanide	506649		1*	4	P104	X	1(0.454)
Silver nitrate	7761888		1	1		X	1(0.454)
Silvex	93721	Propionic acid, 2-(2,4,5-trichlorophenoxy)- 2,4,5-TP acid	100	1,4	U233	B	100(45.4)
Sodium	7440235		1000	1		A	10(4.54)
Sodium arsenate	7631892		1000	1			###
Sodium arsenite	7784465		1000	1			###
Sodium azide	26628228		1*	4	P105	C	1000(454)
Sodium bichromate	10588019		1000	1			###
Sodium bifluoride	1333831		5000	1			##
Sodium bisulfite	7631905		5000	1		D	5000(2270)
Sodium chromate	7775113		1000	1			###
Sodium cyanide	143339		10	1,4	P106	A	10(4.54)
Sodium dodecylbenzene sulfonate	25155300		1000	1		C	1000(454)
Sodium fluoride	7681484		5000	1		C	1000(454)
Sodium hydrosulfide	16721805		5000	1		D	5000(2270)
Sodium hydroxide	1310732		1000	1		C	1000(454)
Sodium hypochlorite	7681529 10022705		100	1		B	100(45.4)
Sodium methylate	124414		1000	1		C	1000(454)
Sodium nitrite	7632000		100	1			##
Sodium phosphate, dibasic	7558794 10039324 10028247 10140655		5000	1		D	5000(2270)
Sodium phosphate, tribasic	7601549 7785844 10101890 10361894 7758294 10124568		5000	1		D	5000(2270)
Sodium selenite	10102188 7782823		1000	1			##
4,4'-Stilbenediol, alpha, alpha'-diethyl-	56531	Diethylstilbestrol	1*	4	U089		#
Streptozotocin	18883664	D-Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-	1*	4	U206		#
Strontium chromate	7789062		1000	1			#
Strontium sulfide	1314961		1*	4	P107	B	100(45.4)
Strychnidin-10-one, and salts	57249	Strychnine and salts	10	1,4	P108	A	10(4.54)
Strychnidin-10-one, 2,3-dimethoxy-	357573	Brucine	1*	4	P018	A	10(4.54)
Strychnine and salts	57249	Strychnidin-10-one, and salts	10	1,4	P108	A	10(4.54)
Styrene	100425		1000	1		C	1000(454)
Sulfur hydride	7783064	Hydrogen sulfide	100	1,4	U135		##
Sulfur monochloride	12771083		1000	1		C	1000(454)
Sulfur phosphide	1314803	Phosphorus pentasulfide	100	1,4	U189	B	100(45.4)
		Phosphorus sulfide					
Sulfur selenide	7488564	Selenium disulfide	1*	4	U205		##
Sulfuric acid	7664939		1000	1		C	1000(454)

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CAS No.	Regulatory Synonyms	Statutory			Proposed RQ	
			RQ	Code ††	RCRA Waste Number	Category	Pounds(Kg)
Sulfuric acid, dimethyl ester.....	77781	Dimethyl sulfate.....	1*	4	U103		#
Sulfuric acid, thallium(I) salt.....	7446186	Thallium(I) sulfate.....	1000	1,4	P115		##
2,4,5-T.....	93765	2,4,5-T acid..... 2,4,5-Trichlorophenoxyacetic acid	100	1,4	U232	B	100(45.4)
2,4,5-T acid.....	93765	2,4,5-T..... 2,4,5-Trichlorophenoxyacetic acid	100	1,4	U232	B	100(45.4)
2,4,5-T amines.....	2008460		100	1		B	100(45.4)
2,4,5-T esters.....	83798 2545597 61792072 1928478 25168154		100	1		B	100(45.4)
2,4,5-T salts.....	13560991		100	1		B	100(45.4)
TDE.....	72548	DDD..... 4,4' DDD Dichloro diphenyl dichloroethane	1	1,2,4	U060	X	1(0.454)
1,2,4,5-Tetrachlorobenzene.....	95943	Benzene, 1,2,4,5-tetrachloro.....	1*	4	U207	D	5000(2270)
2,3,7,8-Tetrachlorodibenzo-p-dioxin(TCDD).....	746016		1*	2		X	1(0.454)
1,1,1,2-Tetrachloroethane.....	630206	Ethane, 1,1,1,2-tetrachloro.....	1*	4	U208		###
1,1,2,2-Tetrachloroethane.....	79345	Ethane, 1,1,2,2-tetrachloro.....	1*	2,4	U209		###
Tetrachloroethylene.....	127184	Ethene, 1,1,2,2-tetrachloro.....	1*	2,4	U210		###
2,3,4,6-Tetrachlorophenol.....	58902	Phenol, 2,3,4,6-tetrachloro.....	1*	4	U212	A	10(4.54)
Tetraethyldithiopyrophosphate.....	1689245	Dithiopyrophosphoric acid,tetraethyl ester.....	1*	4	P109	B	100(45.4)
Tetraethyl lead.....	78002	Plumbane, tetraethyl.....	100	1,4	P110		##
Tetraethyl pyrophosphate.....	107493	Pyrophosphoric acid, tetraethyl ester.....	100	1,4	P111		##
Tetrahydrofuran.....	109999	Furan, tetrahydro.....	1*	4	U213	C	1000(454)
Tetranitromethane.....	509148	Methane, tetranitro.....	1*	4	P112	A	10(4.54)
Tetraphosphoric acid, hexaethyl ester.....	757584	Hexaethyl tetraphosphate.....	1*	4	P062	B	100(45.4)
Thallic oxide.....	1314325	Thallium(III) oxide.....	1*	4	P113		##
Thallium †.....	7440280		1*	2			##
THALLIUM AND COMPOUNDS.....			1*	2			**
Thallium(I) acetate.....	563688	Acetic acid, thallium(I) salt.....	1*	4	U214		##
Thallium(I) carbonate.....	3533739	Carbonic acid, dithallium (I) salt.....	1*	4	U215		##
Thallium(I) chloride.....	7791120		1*	4	U216		##
Thallium(I) nitrate.....	13102451		1*	4	U217		##
Thallium(III) oxide.....	1314325	Thallic oxide.....	1*	4	P113		##
Thallium(I) selenide.....	12039520		1*	4	P114		##
Thallium(I) sulfate.....	7446186	Sulfuric acid, thallium(I) salt.....	1000	1,4	P115		##
Thioacetamide.....	62555	Ethanethioamide.....	1*	4	U218		#
Thiofanox.....	39198184	3,3-Dimethyl-1-(methylthio)-2-butanone,O-[(methylamino)carbonyl] oxime.	1*	4	P045	B	100(45.4)
Thioimidodicarbonic diamide.....	541537	2,4-Dithiobiuret.....	1*	4	P049	B	100(45.4)
Thiomethanol.....	74931	Methanethiol..... Methylmercaptan	100	1,4	U153	B	100(45.4)
Thiophenol.....	108985	Benzenethiol.....	1*	4	P014	B	100(45.4)
Thiosemicarbazide.....	79196	Hydrazinecarbothioamide.....	1*	4	P116	B	100(45.4)
Thiourea.....	62566	Carbamide, thio.....	1*	4	U219		#
Thiourea, (2-chlorophenyl)-.....	5344821	1-(o-Chlorophenyl)thiourea.....	1*	4	P026	B	100(45.4)
Thiourea, 1-naphthalenyl-.....	86884	alpha-Naphthylthiourea.....	1*	4	P072	B	100(45.4)

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CAS No.	Regulatory Synonyms	Statutory			Proposed RQ	
			RQ	Code ††	RCRA Waste Number	Category	Pounds (Kg)
Thiourea, phenyl.....	103855	N-Phenylthiourea.....	1*	4	P093	B	100(45.4)
Thiram.....	137268	Bis(dimethylthiocarbamoyl) disulfide.....	1*	4	U244	A	10(4.54)
Toluene.....	108883	Benzene, methyl.....	1000	1,2,4	U220	C	1000(454)
Toluenediamine.....	95807	Diaminotoluene.....	1*	4	U221		#
Toluene diisocyanate.....	584849	Benzene, 2,4-diisocyanatomethyl.....	1*	4	U223	B	100(45.4)
o-Toluidine hydrochloride.....	636215	Benzenamine, 2-methyl-, hydrochloride.....	1*	4	U222		#
Toxaphene.....	8001352	Camphene, octachloro.....	1	1,2,4	P123	X	1(0.454)
2,4,5-TP acid.....	93721	Propionic acid, 2-(2,4,5-trichlorophenoxy)- Silvex	100	1,4	U233	B	100(45.4)
2,4,5-TP acid esters.....	32534955		100	1		B	100(45.4)
1H-1,2,4-Triazol-3-amine.....	61825	Amitrole.....	1*	4	U011		#
Trichlorfon.....	52686		1000	1			##
1,2,4-Trichlorobenzene.....	120821		1*	2		B	100(45.4)
1,1,1-Trichloroethane.....	71556	Methyl chloroform.....	1*	2,4	U226	C	1000(454)
1,1,2-Trichloroethane.....	79005	Ethane, 1,1,2-trichloro.....	1*	2,4	U227		###
Trichloroethene.....	79016	Trichloroethylene.....	1000	1,2,4	U228		###
Trichloroethylene.....	79016	Trichloroethene.....	1000	1,2,4	U228		###
Trichloromethanesulfonyl chloride.....	594423	Methanesulfonyl chloride, trichloro.....	1*	4	P118	B	100(45.4)
Trichloromonofluoromethane.....	75694	Methane, trichlorofluoro.....	1*	4	U121	D	5000(2270)
Trichlorophenol.....	25167822		10	1			#
2,4,5-Trichlorophenol.....	95954	Phenol, 2,4,5-trichloro.....	1*	4	U230		##
2,4,6-Trichlorophenol.....	88062	Phenol, 2,4,6-trichloro.....	1*	2,4	U231		###
2,4,5-Trichlorophenoxyacetic acid.....	93765	2,4,5-T..... 2,4,5-T acid	100	1,4	U232	B	100(45.4)
Triethanolamine dodecylbenzene sulfonate.....	27323417		1000	1		C	1000(454)
Triethylamine.....	121448		5000	1		D	5000(2270)
Trimethylamine.....	75503		1000	1*			##
sym-Trinitrobenzene.....	99354	Benzene, 1,3,5-trinitro.....	1*	4	U234		##
1,3,5-Trioxane, 2,4,6-trimethyl.....	123637	Paraldehyde.....	1*	4	U182	C	1000(454)
Tris(2,3-dibromopropyl) phosphate.....	126727	1-Propanol, 2,3-dibromo-, phosphate (3:1).....	1*	4	U235		#
Trypan blue.....	72571	2,7-Naphthalenedisulfonic acid,3,3'-[3,3'-dimethyl-(1,1'-biphenyl)-4,4'-diyl]-bis(azo)]bis(5-amino-4-hydroxy)-tetrasodium salt.	1*	4	U236		#
Unlisted Hazardous Wastes.....	(N.A.)		1*	4			
Characteristic of Ignitability.....			1*	4		B	100(45.4)
Characteristic of Corrosivity.....			1*	4		B	100(45.4)
Characteristic of Reactivity.....			1*	4		B	100(45.4)
Characteristic of EP Toxicity.....			1*	4			
Arsenic.....D004.....			1*	4			###
Barium.....D005.....			1*	4		C	1000(454)
Cadmium.....D006.....			1*	4			###
Chromium(VI).....D007.....			1*	4			##
Lead.....D008.....			1*	4			##
Mercury.....D009.....			1*	4		X	1(0.454)
Selenium.....D010.....			1*	4			##
Silver.....D011.....			1*	4		X	1(0.454)

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CAS No.	Regulatory Synonyms	Statutory			Proposed RQ	
			RQ	Code ††	RCRA Waste Number	Category	Pounds(Kg)
Endrin.....D012.....			1	1,4	P051	X	1(0.454)
Lindane.....D013.....			1	1,4	U129	X	1(0.454)
Methoxychlor.....D014.....			1	1,4	U247	X	1(0.454)
Toxaphene.....D015.....			1	1,4	P123	X	1(0.454)
2,4-D.....D016.....			100	1,4	U240	B	100(45.4)
2,4,5-TP.....D017.....			100	1,4	U233	B	100(45.4)
Uracil, 5-[bis(2-chloroethyl)amino].....	66751	Uracil mustard.....	1*	4	U237		#
Uracil mustard.....	66751	Uracil, 5-[bis(2-chloroethyl)amino].....	1*	4	U237		#
Uranyl acetate.....	541093		5000	1			##
Uranyl nitrate.....	10102084 36478769		5000	1			##
Vanadic acid, ammonium salt.....	7802556	Ammonium vanadate.....	1*	4	P119	C	1000(454)
Vanadium(V) oxide.....	1314621	Vanadium pentoxide.....	1000	1,4	P120		##
Vanadium pentoxide.....	1314621	Vanadium(V) oxide.....	1000	1,4	P120		##
Vanadyl sulfate.....	27774136		1000	1			##
Vinyl acetate.....	108054		1000	1		D	5000(2270)
Vinyl chloride.....	75014	Ethene, chloro-.....	1*	2,3,4	U043		###
Vinylidene chloride.....	75354	1,1-Dichloroethylene..... Ethene, 1,1-dichloro-	5000	1,2,4	U078		###
Warfarin.....	8:812	3-(alpha-Acetylbenzyl)-4-hydroxycoumarin and salts.....	1*	4	P001	B	100(45.4)
Xylene..... m- o- p-	1330207 108383 95478 106423	Benzene, dimethyl..... m- o- p-	1000	1,4	U239	C	1000(454)
Xylenol.....	1300716		1000	1		C	1000(454)
Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[(3,4,5-trimethoxybenzoyloxy)-methyl ester,.....	50555	Reserpine.....	1*	4	U200	D	5000(2270)
Zinc †.....	7440666		1*	2			##
ZINC AND COMPOUNDS.....			1*	2			..
Zinc acetate.....	557346		1000	1			##
Zinc ammonium chloride.....	52623258 14639975 14639986		5000	1			##
Zinc borate.....	1332076		1000	1			##
Zinc bromide.....	7699458		5000	1			##
Zinc carbonate.....	3486359		1000	1			##
Zinc chloride.....	7646857		5000	1			##
Zinc cyanide.....	557211		10	1,4	P121		##
Zinc fluoride.....	7783495		1000	1			##
Zinc formate.....	557415		1000	1			##
Zinc hydrosulfite.....	7779864		1000	1			##
Zinc nitrate.....	7779886		5000	1			##
Zinc phenolsulfonate.....	127822		5000	1			##
Zinc phosphide.....	1314847		1000	1,4	P122		##
Zinc silicofluoride.....	16871719		5000	1			##
Zinc sulfate.....	7733020		1000	1			##
Zirconium nitrate.....	13746899		5000	1		D	5000(2270)
Zirconium potassium fluoride.....	16923958		5000	1		C	1000(454)

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CAS No.	Regulatory Synonyms	Statutory			Proposed RQ	
			HQ	Code ††	RCRA Waste Number	Category	Pounds (Kg)
Zirconium sulfate.....	14644612		5000	1		D	5000(2270)
Zirconium tetrachloride.....	10026116		5000	1		D	5000(2270)
F001.....			1*	4			###
The following spent halogenated solvents used in degreasing and sludges from the recovery of these solvents in degreasing operations:							
(a) Tetrachloroethylene.....	127184						###
(b) Trichloroethylene.....	79016						###
(c) Methylene chloride.....	75092					C	1000(454)
(d) 1,1,1-Trichloroethane.....	71556					C	1000(454)
(e) Carbon tetrachloride.....	56235						###
(f) Chlorinated fluorocarbons.....	(N.A.)					D	5000(2270)
F002.....			1*	4			###
The following spent halogenated solvents and the still bottoms from the recovery of these solvents:							
(a) Tetrachloroethylene.....	127184						###
(b) Methylene Chloride.....	75092					C	1000(454)
(c) Trichloroethylene.....	79016						###
(d) 1,1,1-Trichloroethane.....	71556					C	1000(454)
(e) Chlorobenzene.....	108907					B	100(45.4)
(f) 1,1,2-Trichloro-1,2,2-trifluoroethane.....	76131					D	5000(2270)
(g) o-Dichlorobenzene.....	106467					B	100(45.4)
(h) Trichlorofluoromethane.....	75694					D	5000(2270)
F003.....			1*	4		B	100(45.4)
The following spent non-halogenated solvents and the still bottoms from the recovery of these solvents:							
(a) Xylene.....	1330207					C	1000(454)
(b) Acetone.....	67641					D	5000(2270)
(c) Ethyl acetate.....	141786					D	5000(2270)
(d) Ethylbenzene.....	100414					C	1000(454)
(e) Ethyl ether.....	60297					B	100(45.4)
(f) Methyl isobutyl ketone.....	108101					D	5000(2270)
(g) n-Butyl alcohol.....	71363					D	5000(2270)
(h) Cyclohexanone.....	108941					D	5000(2270)
(i) Methanol.....	67581					D	5000(2270)
F004.....			1*	4			##
The following spent non-halogenated solvents and the still bottoms from the recovery of these solvents:							
(a) Cresols/Cresylic acid.....	1319773						##
(b) Nitrobenzene.....	98953						##
F005.....			1*	4			##
The following spent non-halogenated solvents and the still bottoms from the recovery of these solvents:							
(a) Toluene.....	108883					C	1000(454)
(b) Methyl ethyl ketone.....	78933					C	1000(454)
(c) Carbon disulfide.....	75150						##
(d) Isobutanol.....	78831					D	5000(2270)
(e) Pyridine.....	110861						##
F006.....			1*	4			###
Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum							
F007.....			1*	4		A	10(4.54)
Spent cyanide plating bath solutions from electroplating operations (except for precious metals electroplating spent cyanide plating bath solutions)							
F008.....			1*	4		A	10(4.54)
Plating bath sludges from the bottom of plating baths from electroplating operations where cyanides are used in the process (except for precious metals electroplating plating bath sludges)							
F009.....			1*	4		A	10(4.54)
Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process (except for precious metals electroplating spent stripping and cleaning bath solutions)							

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CAS No.	Regulatory Synonyms	Statutory			Proposed RQ	
			RQ	Code ††	RCRA Waste Number	Category	Pounds(Kg)
F010 Quenching bath sludge from oil baths from metal heat treating operations where cyanides are used in the process (except for precious metals heat-treating quenching bath sludges)			1*	4		A	10(4.54)
F011 Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations (except for precious metals heat treating spent cyanide solutions from salt bath pot cleaning)			1*	4		A	10(4.54)
F012 Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process (except for precious metals heat treating quenching wastewater treatment sludges)			1*	4		A	10(4.54)
F019 Wastewater treatment sludges from the chemical conversion coating of aluminum			1*	4			##
K001 Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol			1*	4		X	1(0.454)
K002 Wastewater treatment sludge from the production of chrome yellow and orange pigments			1*	4			##
K003 Wastewater treatment sludge from the production of molybdate orange pigments			1*	4			##
K004 Wastewater treatment sludge from the production of zinc yellow pigments			1*	4			##
K005 Wastewater treatment sludge from the production of chrome green pigments			1*	4			##
K006 Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated)			1*	4			##
K007 Wastewater treatment sludge from the production of iron blue pigments			1*	4			##
K008 Oven residue from the production of chrome oxide green pigments			1*	4			##
K009 Distillation bottoms from the production of acetaldehyde from ethylene			1*	4			###
K010 Distillation side cuts from the production of acetaldehyde from ethylene			1*	4			###
K011 Bottom stream from the wastewater stripper in the production of acrylonitrile			1*	4			###
K013 Bottom stream from the acetonitrile column in the production of acrylonitrile			1*	4			###
K014 Bottoms from the acetonitrile purification column in the production of acrylonitrile			1*	4			##
K015 Still bottoms from the distillation of benzyl chloride			1*	4			#
K016 Heavy ends or distillation residues from the production of carbon tetrachloride			1*	4			###
K017 Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin			1*	4			###

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CAS No.	Regulatory Synonyms	Statutory			Proposed RQ	
			RQ	Code ††	RCRA Waste Number	Category	Pounds(Kg)
K018 Heavy ends from the fractionation column in ethyl chloride production			1*	4			###
K019 Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production			1*	4			###
K020 Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production			1*	4			###
K021 Aqueous spent antimony catalyst waste from fluoromethanes production			1*	4			###
K022 Distillation bottom tars from the production of phenol/acetone from cumene			1*	4			###
K023 Distillation light ends from the production of phthalic anhydride from naphthalene			1*	4		D	5000(2270)
K024 Distillation bottoms from the production of phthalic anhydride from naphthalene			1*	4		D	5000(2270)
K025 Distillation bottoms from the production of nitrobenzene by the nitration of benzene			1*	4		B	100(45.4)
K026 Stripping still tails from the production of methyl ethyl pyridines			1*	4			##
K027 Centrifuge and distillation residues from toluene diisocyanate production			1*	4			#
K028 Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane			1*	4			###
K029 Waste from the product steam stripper in the production of 1,1,1-trichloroethane			1*	4			###
K030 Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene			1*	4			###
K031 By-product salts generated in the production of MSMA and cacodylic acid			1*	4			###
K032 Wastewater treatment sludge from the production of chlordane			1*	4		X	1(0.454)
K033 Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane			1*	4		X	1(0.454)
K034 Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane			1*	4		X	1(0.454)
K035 Wastewater treatment sludges generated in the production of creosote			1*	4			###
K036 Still bottoms from toluene reclamation distillation in the production of disulfoton			1*	4		X	1(0.454)
K037 Wastewater treatment sludges from the production of disulfoton			1*	4		X	1(0.454)
K038 Wastewater from the washing and stripping of phorate production			1*	4			##
K039			1*	4			##

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CAS No.	Regulatory Synonyms	Statutory			Proposed RQ	
			RQ	Code ††	RCRA Waste Number	Category	Pounds(Kg)
Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate							
K040 Wastewater treatment sludge from the production of phorate			1*	4			##
K041 Wastewater treatment sludge from the production of toxaphene			1*	4		X	1(0.454)
K042 Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T			1*	4			###
K043 2,6-Dichlorophenol waste from the production of 2,4-D			1*	4			###
K044 Wastewater treatment sludges from the manufacturing and processing of explosives			1*	4		A	10(4.54)
K045 Spent carbon from the treatment of wastewater containing explosives			1*	4		A	10(4.54)
K046 Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds			1*	4			##
K047 Pink/red water from TNT operations			1*	4		A	10(4.54)
K048 Dissolved air flotation (DAF) float from the petroleum refining industry			1*	4			##
K049 Slop oil emulsion solids from the petroleum refining industry			1*	4			##
K050 Heat exchanger bundle cleaning sludge from the petroleum refining industry			1*	4			##
K051 API separator sludge from the petroleum refining industry			1*	4			##
K052 Tank bottoms (leaded) from the petroleum refining industry			1*	4			##
K060 Ammonia still lime sludge from coking operations			1*	4			###
K061 Emission control dust/sludge from the primary production of steel in electric furnaces			1*	4			###
K062 Spent pickle liquor from steel finishing operations			1*	4			##
K069 Emission control dust/sludge from secondary lead smelting			1*	4			###
K071 Brine purification muds from the mercury cell process in chlorine production, where separately pre-purified brine is not used			1*	4		X	1(0.454)
K073 Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production			1*	4			###
K083 Distillation bottoms from aniline extraction			1*	4			##
K084 Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds			1*	4			###

TABLE 302.4 - LIST OF HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES—Continued

Hazardous Substance	CAS No.	Regulatory Synonyms	Statutory			Proposed RQ	
			RQ	Code ††	RCRA Waste Number	Category	Pounds(Kg)
K085..... Distillation or fractionation column bottoms from the production of chlorobenzenes			1*	4			###
K086..... Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead			1*	4			##
K087..... Decanter tank tar sludge from coking operations			1*	4			##
K093..... Distillation light ends from the production of phthalic anhydride from ortho-xylene			1*	4		D	5000(2270)
K094..... Distillation bottoms from the production of phthalic anhydride from ortho-xylene			1*	4		D	5000(2270)
K095..... Distillation bottoms from the production of 1,1,1-trichloroethane			1*	4			###
K096..... Heavy ends from the heavy ends column from the production of a,a,a-trichloroethane 1,1,1			1*	4			###
K097..... Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane			1*	4		X	1(0.454)
K098..... Untreated process wastewater from the production of toxaphene			1*	4		X	1(0.454)
K099..... Untreated wastewater from the production of 2,4-D			1*	4			###
K100..... Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting. (Components of this waste are identical with those of K069)			1*	4			###
K101..... Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds			1*	4			###
K102..... Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds			1*	4			###
K103..... Process residues from aniline extraction from the production of aniline			1*	4			##
K104..... Combined wastewater streams generated from nitrobenzene/aniline chlorobenzenes			1*	4			###
K105..... Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes			1*	4			###
K106..... Wastewater treatment sludge from the mercury cell process in chlorine production			1*	4		X	1(0.454)

- indicates this substance is being assessed for carcinogenicity, statutory RQ applies

- indicates this substance is being assessed for other toxic effects, statutory RQ applies

- indicates this substance is being assessed for both carcinogenicity and other toxic effects, statutory RQ applies

- the Agency will adjust the RQ for radionuclides in a future rulemaking; until that time the statutory 1 pound RQ is applicable

1* - indicates the CERCLA statutory 1 pound RQ for all hazardous substances designated under any of the statutory sources other than CWA Section 311

(including all hazardous wastes) and is not to be confused with a 1 pound RQ assigned under CWA Section 311

** - indicates no RQ is being assigned to the generic or broad class

† - no reporting of releases of massive forms of these substances is required if the diameter of the pieces of the substance released is equal to or exceeds 100 micrometers (0.004 inches)

†† - indicates the statutory source as defined by 1, 2, 3 or 4 below

1 - indicates the statutory source for designation of this substance under CERCLA is CWA Section 311(b)(4)

2 - indicates the statutory source for designation of this substance under CERCLA is CWA Section 307(a)

3 - indicates the statutory source for designation of this substance under CERCLA is CAA Section 112

4 - indicates the statutory source for designation of this substance under CERCLA is RCRA Section 3001

§ 302.5 Determination of reportable quantities.

(a) *Listed Hazardous Substances.* The quantity in the column "Proposed RQ" for each substance in Table 302.4 is the reportable quantity for that substance.

(b) *Unlisted Hazardous Substances.* Unlisted hazardous wastes designated by 40 CFR § 302.4(b) have the reportable quantity of 100 pounds, except for those unlisted hazardous wastes exhibiting the characteristic of EP toxicity identified in 40 CFR § 261.24. Unlisted hazardous wastes which exhibit EP toxicity have the reportable quantities listed in Table 302.4 for the contaminant on which the characteristic of EP toxicity is based. If an unlisted hazardous waste exhibits EP toxicity on the basis of more than one contaminant, the reportable quantity for that waste shall be the lowest of the reportable quantities listed in Table 302.4 for those contaminants. If an unlisted hazardous waste exhibits the characteristic of EP toxicity and one or more of the other characteristics referenced in 40 CFR § 302.4(b), the reportable quantity for that waste shall be the lowest of the applicable reportable quantities.

§ 302.6 Notification requirements.

Any person in charge of a vessel or an offshore or an onshore facility shall, as soon as he has knowledge of any release (other than a federally permitted release or normal application of a pesticide) of a hazardous substance from such vessel or facility in a quantity equal to or exceeding the reportable quantity determined by this part in any 24-hour period, immediately notify the National Response Center ((800) 424-8802; in Hawaii, Alaska, and the Washington, D.C. metropolitan areas (202) 426-2675).

§ 302.7 Penalties.

(a) Any person.

(1) In charge of a vessel from which a hazardous substance is released, other than a federally permitted release, into or upon the navigable waters of the United States, adjoining shorelines, or into or upon the waters of a contiguous zone,

(2) In charge of a vessel from which a hazardous substance is released, other than a federally permitted release, which may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States (including resources under the Fishery Conservation and Management Act of 1976), and who is otherwise subject to the jurisdiction of the United States at the time of the release, or

(3) In charge of a facility from which a hazardous substance is released, other than a federally permitted release, in a quantity equal to or greater than that reportable quantity determined under this part who fails to notify immediately the National Response Center as soon as he has knowledge of such release shall, upon conviction, be fined not more than \$10,000 or imprisoned for not more than one year, or both.

(b) Notification received pursuant to this paragraph or information obtained by the exploitation of such notification shall not be used against any such person in any criminal case, except a prosecution for perjury or for giving a false statement.

(c) This section shall not apply to the application of a pesticide product registered under the Federal Insecticide, Fungicide, and Rodenticide Act or to the handling and storage of such a pesticide product by an agricultural producer.

2. It is proposed to revise 40 CFR 117.3 as follows:

§ 117.3 Determination of reportable quantities.

The quantity listed with each substance in Table 302.4, in 40 CFR 302.4 is determined to be reportable quantity for that substance.

Dated: April 26, 1983.

Lee L. Verstandig,
Administrator.

(FR Doc. 83-13985 Filed 5-24-83; 8:45 am)
BILLING CODE 6560-50-M

40 CFR Part 302

[SWH-FRL 2207-5a]

Designation of Additional Hazardous Substances

AGENCY: Environmental Protection Agency.

ACTION: Advance Notice of Proposed Rulemaking.

SUMMARY: Under Section 102(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA" or "Superfund"), the Environmental Protection Agency ("EPA" or "the Agency") is considering proposal of regulations to designate hazardous substances in addition to those already designated under Section 101(14) of CERCLA. Section 102(a) requires the Administrator to promulgate regulations designating as hazardous substances those substances that, when released into the environment, may present substantial danger to public health or welfare or the environment. This Advance Notice of

Proposed Rulemaking ("ANPRM") discusses and solicits comments on various approaches that the Agency may use to determine what additional substances, if any, should be proposed for designation as hazardous.

DATES: To be considered, written comments must be submitted in triplicate on or before July 25, 1983.

ADDRESS: Send written comments to: Emergency Response Division, Docket Clerk, Attn: Docket No. 102 ADD, U.S. Environmental Protection Agency, 401 M Street, S.W., WH-548B, Washington, D.C. 20460.

FOR FURTHER INFORMATION CONTACT:

For general information contact: RCRA/Superfund Hotline, (800) 424-9346 ((202) 382-3000 in Washington, D.C.).

For specific information contact: Dr. K. Jack Kooyoomjiam, Chief, Regulation Development Section, Emergency Response Division (WH-548B), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460, or the RCRA/Superfund Hotline (800) 424-9346, in Washington, D.C. (202) 382-3000.

SUPPLEMENTARY INFORMATION:

1. Background Information

Substances are designated as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, CERCLA (Pub. L. 96-510), 42 U.S.C. Section 9601 *et seq.*, in two ways. Section 101(14) defines "hazardous substance" to include substances designated under certain provisions of other environmental statutes: Sections 307(a) and 311(b)(2)(A) of the Federal Water Pollution Control Act (Clean Water Act), Section 112 of the Clean Air Act, Section 3001 of the Solid Waste Disposal Act (commonly known as the Resource Conservation and Recovery Act, "RCRA"), and Section 7 of the Toxic Substances Control Act. In addition, Section 102(a) requires the EPA Administrator to promulgate regulations to designate as hazardous substances other elements, compounds, mixtures, solutions, and substances that may present substantial danger to public health or welfare or the environment when released into the environment.

The consequences of designation can be substantial. First, Section 103(a) of CERCLA requires that releases of designated hazardous substances that equal or exceed reportable quantities ("RQs") be reported to the National Response Center unless the release is federally permitted or otherwise exempted. (For a further discussion of reportable quantities and release

notification see the Notice of Proposed Rulemaking ("NPRM") on Superfund Notification Requirements and Reportable Quantity Adjustments, published elsewhere in today's **Federal Register**.) This notification allows the federal government to determine whether a response is necessary. In addition, Section 103(b) establishes penalties, including criminal sanctions, for persons in charge of vessels or facilities who fail to report releases of hazardous substances which equal or exceed reportable quantities. Any such person who, as soon as he has knowledge of a reportable release, fails to report the release pursuant to Section 103 (a) or (b) shall, upon conviction, be fined no more than \$10,000 or imprisoned for not more than one year, or both.

Regardless of whether a reportable quantity of the hazardous substance is released and proper notification is given, any person responsible for a release of hazardous substances may be liable for:

(A) All costs of removal or remedial action incurred by the United States Government or a State not inconsistent with the national contingency plan;

(B) Any other necessary costs of response incurred by any other person consistent with the national contingency plan; and

(C) damages for injury to, destruction of, or loss of natural resources, including the reasonable costs of assessing such injury, destruction, or loss resulting from such a release (see Section 107 of CERCLA).

Finally, substances designated as hazardous under CERCLA must also be listed as hazardous materials under the Hazardous Materials Transportation Act (see Section 306(a) of CERCLA).

EPA intends to consider carefully these economic impacts in developing its designation strategy.

II. Major Alternatives Under Consideration and Requests for Public Comment

EPA contemplates that the designation process will involve two distinct steps. First, the Agency will identify a candidate list or lists of substances to be considered for designation. Second, the Agency will identify the criteria to be applied to determine which substances on the candidate list or lists will be designated as hazardous substances. EPA is considering several alternatives for both of these steps. The first section below discusses the potential candidate lists and the second section discusses possible criteria for designating substances from these candidate lists.

The Agency has conducted several preliminary economic and technical analyses in support of this ANPRM. These analyses are part of the rulemaking record: "Analysis of the Economic Effects of Regulatory Strategies for Sections 102 and 103 of the Comprehensive Environmental Response, Compensation, and Liability Act," November 2, 1981; and "Strategies for Designation of Additional Hazardous Substances pursuant to CERCLA Section 102(a)," September 17, 1982.

Public comment is solicited on the alternatives discussed below and on other alternatives that commentators may want the Agency to consider.

A. Candidate Lists

EPA has identified a number of candidate lists that might be considered for designating hazardous substances. These lists are briefly described below. They are divided into two groups: specific lists developed under other environmental statutes or programs, and general data bases which include broader lists of potential hazardous substances. EPA is soliciting comments on which lists are appropriate for EPA to review in designating hazardous substances, particularly information on the scope of coverage of these candidate lists and the availability of data for substances on these lists. EPA may also decide to designate hazardous substances in several phases, rather than complete the designation process in one rulemaking. EPA solicits comments on which of the candidate lists should be given highest priority and solicits information concerning other candidate lists not mentioned below that should be considered.

The presence of a substance on a candidate list does not in itself determine whether the substance will be designated as a hazardous substance under CERCLA. Part II(B) of this notice discusses the types of criteria that might be applied to determine whether substances on these candidate lists are sufficiently hazardous to warrant designation. The Agency anticipates that substances on the candidate lists will be ranked on the basis of factors such as production volume, potential for release, and the availability of data in conjunction with the application of the criteria discussed in part II(B).

Specific Lists:

(1) Certain pesticide or pesticide active ingredients identified under the Federal Insecticide, Fungicide, and Rodenticide Act ("FIFRA"). One potential candidate list is the list of about 600 pesticide active ingredients identified by EPA after a review of

about 40,000 pesticide formulations ("Pesticide Active Ingredients Standards Ranking Scheme Results" produced by the EPA Office of Pesticide Programs; see 47 FR 3770-3771, January 27, 1982). These ingredients will be evaluated by EPA to determine their possible effects on man and the environment. It may not be possible for EPA to analyze all of these pesticides and pesticide active ingredients to determine whether they should be designated as hazardous substances under CERCLA. EPA solicits comments on methods for setting priorities for analysis of these substances.

(2) Chemicals listed under RCRA, 40 CFR Part 261, Appendix VIII, excluding those already listed under Section 101(14). These substances are hazardous constituents of RCRA wastes (45 FR 33132-33133, May 19, 1980).

(3) Materials listed under the Department of Transportation ("DOT") regulations issued under the Hazardous Materials Transportation Act, excluding those already listed under Section 101(14). These lists designate materials considered hazardous for the purpose of transportation (49 CFR 172.101, 172.102).

(4) Substances determined by the International Agency for Research on Cancer ("IARC") to demonstrate carcinogenic characteristics, excluding those already listed under Section 101(14). IARC has assessed the evidence for carcinogenicity of substances from experimental animal studies and classified these substances into five groups according to the extent of evidence of carcinogenicity: (1) sufficient evidence, (2) limited evidence, (3) inadequate evidence, (4) negative evidence, and (5) no data. Substances might be included on the candidate list if the IARC has determined that there is sufficient or limited evidence of carcinogenicity. Sufficient evidence indicates a causal association between exposure and human cancer, while limited evidence indicates a possible carcinogenic effect in humans, although the data are not sufficient to demonstrate a causal association (Table 1, International Agency for Research on Cancer, monograph supplement, September 1979).

(5) The 1982 list of explosive materials subject to regulation under 18 USC Chapter 40, 47 FR 40974-40976 (September 16, 1982). This list of explosive materials is designated by the Director of the Bureau of Alcohol, Tobacco and Firearms.

(6) The Toxic Substances Control Act (TSCA) Section 4(e) list. This is the list of chemical substances and mixtures recommended for priority consideration

in regard to testing requirements under TSCA Section 4(a) (see the TSCA Chemicals in Progress Bulletin, Volume 3, Number 1, April 1982).

General Lists

(1) *Chemical Activities Status Report ("CASR")*. This data base identifies substances that the Agency has already regulated, that it is proposing for regulation, or that it otherwise is considering. CASR covers other substances in addition to those already regulated or proposed for rulemaking; it also includes those substances for which the Agency has demonstrated some concern, even if no rulemaking has begun. CASR is limited to EPA activities and does not reflect the activities of other agencies or departments (e.g., DOT, Coast Guard). CASR has been issued as a two-volume Agency report, EPA 560/13-80-040a&b, but the candidate list would be the actual CASR data base, which is constantly updated and may differ slightly from this report.

(2) *The Suspect Chemicals Sourcebook*. This list already includes chemical substances derived from regulatory lists or other publications that have been issued not only by EPA but also by DOT, the Department of Health and Human Services, the Occupational Safety and Health Administration, and IARC. It does not go beyond substances that have already been regulated, considered for regulation, or listed for testing. This list was prepared by Executive Enterprise Publications Company, Inc., in cooperation with the Synthetic Organic Chemical Manufacturers Association.

(3) *Toxic Substances Control Act Chemical Substance Inventory*. This list includes approximately 55,000 chemicals. It is likely that most known potentially hazardous chemicals would be included and considered for designation if this list is used. The Agency, however, could have difficulty in establishing priorities and applying designation criteria in a timely fashion to this list, and data on these substances may be insufficient.

B. Criteria for Designation

The Agency has identified four alternative sets of criteria for designating candidate substances as hazardous for purposes of CERCLA. Comment is specifically solicited on these alternatives, and on combinations of them.

Designation Alternative 1: Critical Value Strategy. This approach resembles the primary and secondary criteria used to adjust RQs. [See today's NPRM on Superfund Notification Requirements and Reportable Quantity

Adjustments, published elsewhere in today's Federal Register, for a more detailed explanation of this process.] To assign RQs to designated hazardous substances, the Agency would evaluate whether substances exhibit any of the following characteristics: aquatic toxicity, mammalian (oral, dermal, or inhalation) toxicity, ignitability, reactivity, other toxic effects, carcinogenicity, and a tendency to dissipate into the environment. These characteristics or criteria are used to adjust reportable quantities in the accompanying NPRM. In applying this approach to designation, the Agency would establish a critical value for each of the above criteria. Substances would be designated if the rating of the substances were above the critical value for any criterion. If there were insufficient evidence to judge, the substance could be retained as a candidate pending the collection of further data. The data gathered in the designation process would also be used to establish RQs for substances once they have been designated.

EPA specifically solicits comments on the following issues:

(1) Are the critical values developed to adjust reportable quantities also appropriate for designation of hazardous substances? (These critical values are discussed in the accompanying Notice of Proposed Rulemaking on Superfund Reportable Quantity Adjustments, Part IV.)

(2) Are other critical values more appropriate for designation of hazardous substances?

Designation Alternative 2: A Combination of Production Level and Critical Value Strategy. This alternative would identify substances on the candidate list for further analysis if their annual production level exceeded some specified amount. The critical value methodology would then be applied to these substances to determine whether they should actually be designated. This method treats production volume as an indication of release potential. It assumes that there is less chance of a release if a substance is produced in relatively small quantities. For imported substances, the amount imported would be added to the domestic production level.

Section 311 of the Clean Water Act screened substances by production level. The Clean Water Act's final promulgated list of hazardous substances includes those hazardous substances produced at a level of 10 million pounds per year or more. The Agency has found that the materials most commonly encountered (i.e., spilled most frequently) in Section 311 spill

situations are those produced in high volumes. Screening by production levels results in fewer candidate substances than Alternative 1, which means that the Agency may be able to analyze for possible designation the substances most likely to be released. If this approach is taken, however, certain potentially hazardous substances that may be released will not be considered for possible designation because they are no longer produced or they are produced in low volumes.

The Agency specifically requests comments on the following points: (1) if production level is used to screen substances for analysis, what production level should be selected as the cutoff point, and (2) what problems could occur when substances with low production volumes that might otherwise be considered hazardous are not designated.

Designation Alternative 3: Hazard Index. This approach involves a scoring system to evaluate the relative potential threat posed to public health or welfare or the environment when candidate substances are released to the air, ground water, surface water, or soil. A variety of rating factors (e.g., toxicity, reactivity, bioaccumulation, persistence, carcinogenicity) would be used to determine the kinds of hazards that would result and, insofar as possible, the degree of hazard posed. EPA solicits comments concerning the appropriate rating factors. An equation would be used to combine these several factors into a single number. A substance's hazard index value derived in this fashion could be compared to the values determined for other substances, and a ranking of substances would be possible. A cutoff point for designation could then be determined.

A hazard index approach provides a quantitative ranking of hazard that facilitates setting a cutoff point, and it uses all available data. It is possible, however, that (1) data gaps may make a substance appear less hazardous than it is and may make relative ranking difficult to develop, (2) a cutoff point could not be easily determined, (3) there would be no general agreement in the scientific community on how rating factors are to be combined to form an acceptable hazard index for a broad listing of chemicals, and (4) different but equally defensible equations would result in different rankings for the same substance.

Designation Alternative 4: Combination of Release History and Critical Value Strategy. This approach would identify all candidate substances with a history of release problems. For

example, substances would be considered for designation if their release had required frequent or extraordinary response (e. g., rapid evacuation) in the past, or if they had frequently been identified at sites undergoing remedial action under CERCLA. The critical value strategy would then be applied to determine which substances pose a threat to public health or welfare or the environment.

This approach identifies for CERCLA designation those substances that pose a threat to public health or welfare or the environment and that have a proven history of release problems. Designation of substances that have not historically been a problem is avoided. It may be appropriate, however, to designate substances that are rarely, if ever, released because of the potential hazard they pose. In addition, non-regulated substances are not usually monitored when releases of hazardous substances occur, so that there may be no release record of a substance that is released in potentially significant amounts.

111. Other Issues

Several issues will arise regardless of the alternatives selected. The issues include designation under other statutes and the use of categorical designation.

A. Effects of Designation Under Other Statutes

Substances may be added to or deleted from the lists identified under Section 101(14) of CERCLA; Sections 307(a) and 311(b)(2)(A) of the Clean Water Act, Section 112 of the Clean Air Act, Section 3001 of RCRA, and Section 7 of TSCA. Substances added to these

lists will be added to the CERCLA list and substances deleted from these lists will be deleted from the CERCLA list (unless they are also designated under some other provisions). In proposing any additions to these other lists, EPA will reference the fact that these substances will automatically be designated under CERCLA. EPA anticipates proposing RQs for these substances at that time. EPA solicits comments on any other arrangements that might be helpful to inform the public concerning additions to or deletions from these lists.

B. Categorical Versus Individual Designation

Hazardous substances could be designated as categories of substances (e.g., acids) or as individual substances (e.g., sulfuric acid). If designation is by category, however, the designation may be too broad. Although such an approach guarantees that all truly hazardous substances in that category are designated, it could impose an unnecessary burden on the regulated community and might prevent EPA from focusing on the most serious releases. In addition, RQ assignment might be complicated if individual substances covered by a single categorical designation required different RQs. Individual designation, on the other hand, is a time-consuming process, and designation of particular substances as hazardous under CERCLA may take longer than if the categorical designation approach had been used. A delay or a failure to designate substances as hazardous may adversely affect public health or welfare or the environment.

The Agency requests public comment on the relative merits of categorical versus individual designation.

IV. Public Comment

To summarize the previous discussion, public comment is specifically requested on the following:

- (1) The alternatives presented for developing a list of candidate substances;
- (2) The alternatives presented for selecting substances from the candidate list for designation as hazardous for purposes of CERCLA;
- (3) The option of designating no new hazardous substances;
- (4) The relative merits of designating substances categorically or individually;
- (5) Data bases or techniques that could be used by the Agency to fill data gaps about substances being considered for designation.

List of Subjects in 40 CFR Part 302

Administrative practice and procedure, Air pollution control, Chemicals, Hazardous materials, Hazardous materials transportation, Hazardous substances, Hazardous wastes, Intergovernmental relations, Liabilities, Natural resources, Nuclear materials, Penalties, Pesticides and pests, Radioactive materials, Reporting and recordkeeping requirements, Superfund, Waste treatment and disposal, Water pollution control, Water supply.

Dated: April 26, 1983.

Lee L. Verstandig

Acting Administrator.

[FR Doc. 83-13986 Filed 5-24-83; 8:46 am]

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